The New York State **Conservationist** *August-September 1955*

Courtesy of Charles R. Henschel

"Hound and Hunter" by Winslow Homer, 1892

State of New York Conservation Department

1

2

3

4

Evolution of The Great Seal

We have had 15 seals — one of the Dutch, nine of the British province, and five since the Revolution and subsequent organization of the State of New York. Nine of these seals are shown here. (1) The Seal of New Netherland. (2) After British occupation, arms of the House of Stuart. (3) Seal by command of James II, 1688, for New England, New York and East and West New Jersey. (4) In 1690, King William added the arms of the House of Nassau. (5) Last of the provincial seals, by George III.

(6) First Seal of the State of New York, 1777.
(7) Seal of 1779, with Arms complete.
(8) Fourth seal of the State, 1809.
(9) Fifth and last, 1882.

5

6

7

9

8

The Good Old Days

To at least a few of our readers the cover of this issue will bring back memories of long ago, memories of late Summer afternoons on a still Adirondack pond, of hounds barking on the mountains, of deer driven to the water and killed there, in a shattering burst of violence, by the hunter waiting in his guide boat. When this was over, sooner or later the natural quiet returned. To some of our readers, perhaps, this painting will suggest the Good Old Days.

As a record of contemporary sport, it is absolutely accurate; Homer was there, he painted what he saw, and his sight was wide and penetrating. The result was an especially fine watercolor. But the incident it records will come as something of a shock to most of our readers because it suggests a concept of sport and sportsmanship which, although acceptable in its day, is now so out of tune with our times that we're inclined to relegate it to ancient history. And gladly; we want no part of it.

It is customary, these days, for both sportsmen and professional conservationists to take a rather gloomy view of the present state of their interests, and a still gloomier view as to what the future may hold. A look at the past may dissipate some of this gloom and put the picture in perspective. It may also raise an interesting question: Just how good were The Good Old Days?

As for us, we'll settle for the present —for the way things are now—and not just because we have no other choice. We like the way Conservation Departments, staffed by dedicated people (an increasing number of them specially trained in Conservation by both state and private universities), have met the challenges presented by the mounting pressure on *all* of our natural resources, not just fish and game. As our problems have grown, so have our Conservation Departments to meet them.

And so have our sportsmen. It is, inconceivable, for example, that the hounding or jacking of deer would be considered sport to-day, even if the deer herd could stand it; we have simply outgrown this sort of thing. There are exceptions of course, but by and large the sportsman of today is a thinking fellow, educated in the fundamental principles of fish and game management, or at least aware that they exist; aware too that true sportsmanship, an end in itself, is also the surest guarantee of sport in the future.

All this is something quite new since Winslow Homer painted his picture back in the Nineties. If those were the Good Old Days, we can congratulate ourselves on their passing.—Editor.

The New York State

Conservationist

AUGUST-SEPTEMBER, 1955

Contents

VOLUME 10 NUMBER 1

FIRST COVER		*Winslow Homer, 1892*
SECOND COVER		*Roland B. Miller*
OUR JOB ON THE SHINGLEKILL	2	*William Rice*
THE STRAIGHT LOG DAM	4	*Dave Cook*
CONSERVATION GOOD TURN	6	*Ted S. Pettit*
A. N. CHENEY AND HIS GUN	8	*William H. Hill*
BIG MOOSE LAKE	9	*W. A. Pearce*
THE ADIRONDACK GUIDE-BOAT	10	*Seneca Ray Stoddard*
A DAY IN THE MARSH	12	*Dirck Benson*
SPEAR FISHING	14	*W. Mason Lawrence*
REPORT ON WOOD CHIPPERS	15	*Prof. E. W. Foss*
THE HUDSON RIVER SUITE	16	*Andre Kostelanetz*
FORESTRY IN NORWAY	18	*E. W. Littlefield*
DEER HUNTING—THEN AND NOW	19	*Robert W. Darrow*
FROGS AND TOADS OF NEW YORK	23	*Dr. Albert H. Wright*
CENTER SPREAD		*H. Wayne Trimm*
CHAUTAUQUA COUNTY	27	*Roy Irving*
WHITE PERCH	28	*Frank A. Toman*
WHITE BASS	29	*John R. Greeley*
THE FOREST AND THE GAME	30	*Albert G. Hall, F. F. Wright*
CHUBS	32	*John R. Greeley*
THE BACK OF THE BOOK	34	*(Scatter Shots, Etc.)*
LETTERS TO THE EDITOR	42	*(From Our Readers)*
THE OSWEGATCHIE	48	*Clayt Seagears*

STATE OF NEW YORK, AVERELL HARRIMAN, *Governor*
CONSERVATION DEPARTMENT, LOUIS A. WEHLE, *Commissioner*
JUSTIN T. MAHONEY, *Deputy Commissioner*
JOHN F. DALY, *Secretary*
CONSERVATION EDUCATION, CLAYT. SEAGEARS, *Director of Division*
THE CONSERVATIONIST, P. W. FOSBURGH, *Editor*
A. W. BROMLEY, ROLAND B. MILLER, *Editorial*
MICHAEL C. WALES, *Circulation Manager*
EARL McGUIRK, FRED CHAMBERS, *Photographers*
W. I. VAN DER POEL, JR., *Design and Typography*

TO SUBSCRIBE. Print your name, street address, zone and state. Send with $2 (check, money order or cash at senders' risk) to *The Conservationist*, Room 515, Arcade Bldg., Albany 1, N. Y. Three years for $5. Single copies, $.50. NO STAMPS, PLEASE.

Permission is granted to reprint any text from this magazine provided proper credit is given to the New York State Conservation Department and to this magazine.

The Conservationist is an official publication of the N.Y.S. Conservation Dept., published every two months at the Department's offices, Arcade Bldg., Albany, N. Y. No advertising accepted. Subscription rate $2.00 per year. Entered as Second Class matter July 24, 1946 at the Post Office at Albany, N. Y. under Act of March 3, 1879. Printed in U. S. A.

A lot of enthusiasm, a little sweat and less than $30 worth of materials equals one good V dam.

Our Job on the Shinglekill

Lower Shinglekill before improvement typifies many flat eroded Catskill streams. Few trout can survive such conditions.

SEVERAL years ago, at the request of the organized sportsmen in Greene County, the State Legislature passed an enabling act which made it possible for the County Board of Supervisors to allocate as much as a thousand dollars for the propagation of fish and game in the county. Similar acts are in effect in several other counties.

This Spring, when the Federation's request for funds was made to the Board of Supervisors, we were informed that if we could present a workable conservation program to them it would receive sympathetic consideration. Accordingly, a meeting of all the Fish and Game Chairmen of the 14 clubs affiliated with the Federation was called. This meeting was held in Palenville and about 40 representatives of the clubs were present. Each club was given an opportunity to suggest the manner in which we should use the funds (if they were granted) and each proposal was fully discussed. It was finally agreed that a stream improvement project would show the greatest return over the longest term. A section of the Shinglekill Creek, flowing through farm property in the Town of Cairo, was selected as the most logical place to do the work; because this land is public property, it can never be posted—and the stream in that section was in sore need of improvement work.

As chairman of the Federation Fish and Game Committee, it fell to me to get the ball rolling. I got in touch with the Southern District office of the Conservation Department at Poughkeepsie and

in a short time John Grim (Aquatic Biologist) and I were knee-deep in a set of plans which were finally put into shape and submitted to the Board of Supervisors for their approval. They were accepted and we were told to go ahead with their execution.

To understand fully what we planned to do, it is necessary to have background information on the general nature of the stream itself and some of the problems which confronted us. The Shinglekill is a tributary to Catskill Creek. It drains the main east range of the Catskills from the vicinity of Acra Point south to Winter Clove Valley, a distance of perhaps five miles as the crow flies. It has three major tributaries itself, each of which are wonderfully productive as brood streams for brook trout. But they recede underground in sections during dry years, while in any year they are subject to flash floods—just like most of our Catskill streams. Being primarily cobble rock based, they have all tended to spread and consequently shallow their beds.

Through much of the length of the watershed the stream system flows through second growth forest land interspersed with farms. In some sections the streams flow through pastures which have been grazed for longer than most people can remember. Overgrazing by cattle has resulted in serious bank erosion in many sections and the stream has spread over the surrounding area during periods of high water. As a result, the stream has cut multiple channels, and when it recedes to normal flow there is not enough water to fill any of the channels. Consequently there was a terrific loss of fish after very high or very low water periods.

Volunteer sportsmen erected a mile of fence in one day to keep cows out of stream and willow plantings along bank.

OUR first problem was to fence the entire stream to control grazing. Our second problem was to stabilize and deepen the stream bed. Our third problem was to protect the banks of the stream from erosion and, if possible, to build the banks higher as time passed.

Stone rip-rapped bank deflectors will help keep the Shinglekill in its regular bed.

We attacked the first problem by erecting almost a mile of barbed wire fence to enclose completely the section of the stream. The fence building job was accomplished in one day. We had made all preliminary arrangements and had all material on hand before setting the date on which the fence was to be erected. When everything was ready we issued a call to all clubs for volunteers to work on the following Sunday. About 35 men showed up and were quickly assigned to work groups. The result was that as fast as the post hole digger dug a hole a post was set, and as fast as the post was firm the wire crew followed. The fence grew almost magically, and before night it was complete.

Boy Scout Troops from both Catskill and Cairo took part in the willow planting detail which followed, and about 700 willow shoots were set in the ground by them. The planting job is continuing piecemeal and probably will not be fully completed until next Spring.

Our next step was to build rock deflectors to help keep the stream in its present bed. This we accomplished through the co-operation of the Cairo Town Board and Highway Supervisor. We got the town shovel and several town trucks to use on a Saturday (when they did not normally work) and all we paid for was the operator's salary. Using rock from old stone walls we built, in one day, three deflectors which varied in length from 50 feet to about 75 feet.

Straight log dams like this dig pools, break up long flat runs, create heavens for trout. This means more fish and fishing.

We were then ready to start construction on the various deflector dams. For this purpose we bought 25 hemlock logs which varied in length from 22 to 26 feet and ran about ten inches in diameter at the small end. We were given five loads of slabs from a local saw mill, and we purchased a thousand feet of random-width boards, and also heavy roofing paper, nails and dock spikes. When all the material was delivered we arranged to hire the services of a power back-hoe rig and operator, and again sent out a general call for volunteers to show up on the following Wednesday night. About 20 men, mostly from the Cairo Fish and Game Club, came and before dark we had completed our first simple log deflector and had a flow of water running over it. (We made the mistake on our first dam of setting our cross log too high and therefore we raised the water level on the upstream side of the dam without intending to. It was not until our third dam that we finally learned how to get them down deep enough so as to not build up water in front of the dams.)

By the time we had put in about three dams our labor group had petered out to a hard core of willing workers from the Cairo Club. But by this time the boys were beginning to get the idea of what we were after and became fired up to see just how much of a job they could do. They began to come up with suggestions of their own. Some of these suggestions were really good and we went to work on them. Now, they all have a personal interest in the job and proudly take visitors over to show them what they cooked up and what we did.

We had one V dam scheduled and purposely saved it until last. When we were ready to start the boys had worked into a smooth team and we had very little trouble getting our first V dam completed and functioning as it was supposed to.

Coincidentally, the Fire Commissioners and Town Board of the Town of Cairo were planning to put a dam in the lower part of the Village of Cairo for the purpose of holding sufficient water for fire fighting purposes. They had planned a straight dam which would simply form a pool. When the boys in Cairo heard of their plan they suggested a three-way deal among us, and now we're scheduled to build a double log V dam in co-operation with the Town Board and Fish Commissioners. This type dam will furnish both water for them and cover for fish.

An interesting sidelight to this project has been the way aid has been given as soon as it became known what we were up to. A contractor who heard of our problems had some large slabs of concrete walk which he had to take up; he very kindly delivered them creekside and now they are serving as perfect hiding places for trout in the bed of the stream. Another builder had several loads of huge concrete blocks which he had to remove, and any day now they will be serving as deflectors on the curves of the stream. A State road superintendent heard we needed rock to protect the banks from erosion, so he gave us about 75 discarded State road guard posts. They are now protecting the banks of the stream in a spot where erosion had eaten the banks away.

To date, we have completed one V dam, three stone deflectors, and seven simple log dams, and have materials on hand to build a double log V dam and two more simple log dams at a total cost of about $675.

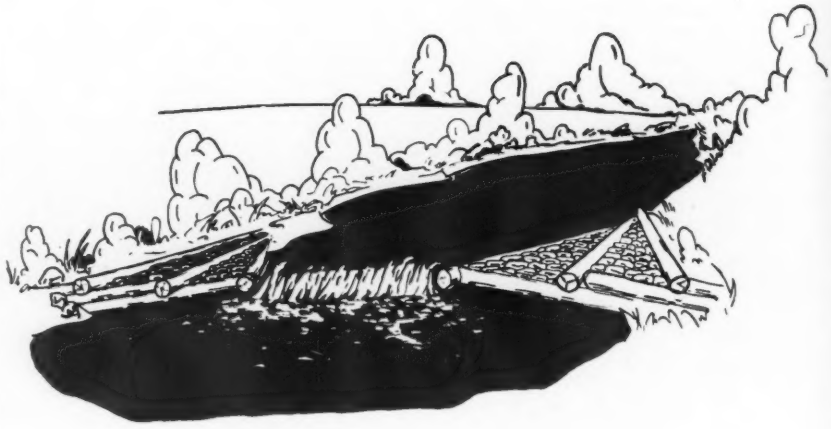
THE boys around here are satisfied that we have more than gotten value received for the effort we have put into this job; they now see we have gained a mile of stream which, before we started, was a total loss.

If the Conservation Department will run an electric shocker test on the area we have worked on now, and again a year from now, I'm satisfied that the results of the test will need no interpretation to the boys here.

We are fully convinced that any game club or Federation in this area can gain more per dollar by spending that dollar on stream improvement in small streams than anything else they can do for fish.

—WILLIAM RICE, *Chairman, Fish and Game Committee, Greene County Federation*

THE STRAIGHT L



STREAM development is the art of fixing up brooks, creeks and small rivers with intent to improve their production of both fish and fishing. But it is not enough that we simply grow fish; we aim to achieve a stable environment that will continuously produce the biggest, balanced population of the right kind and size of game fish in settings that make angling a top-grade sport. If our efforts are successful, we will accomplish a large measure of erosion control as a bonus.

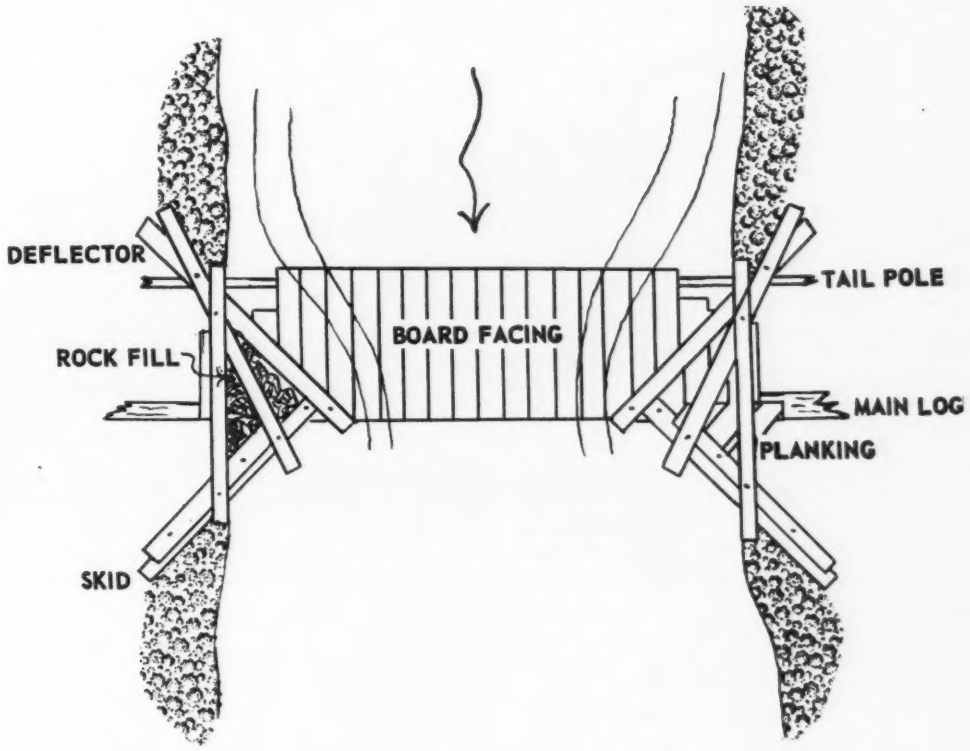
Because the streams on which we work are small and relatively swift—the lively waters—the fish whose environment we try to improve will be trout, and our efforts will be for their special benefit. So, the basic objectives of our stream development will be to keep the water cool and well aeriated; to increase the food supply (consisting mostly of aquatic insects); to stabilize the banks and bottoms; to spread the gradient over the greatest workable length of stream, and to provide the best possible alternation of deep pools for resting and swift riffles for feeding.

Between 1933 and 1940, the Civilian Conservation Corps did a vast amount of stream development work; first on streams in State forests and in the Forest Preserve, which we already owned, later on the then newly-acquired Public Fishing Rights waters. During this period we tried out a great many ideas and ultimately developed a number of structures to accomplish certain specific things. We adjusted and reworked the designs to give the greatest and most permanent effect for the least cost, and to be simple to build.

In the very nature of things, most stream development structures are major construction jobs, require heavy equipment, experienced workers, skilled layout men. Mostly, stream development work is not for the amateur. The notable exception to this rule is the straight log dam, a simple and adaptable structure that can be quickly and quite easily built with ordinary hand tools, and which will last a long time without maintenance. Besides digging a pool and making a riffle, it reduces bank erosion, aeriates the water and gives the fisherman a nice bit of water in which to float a fly or dangle a worm. Incidentally, the pool makes a good water hole for fire protection.

The essential of the straight log dam is a single log laid across the stream and long enough to extend at least two feet

LOG DAM



into each bank. The top of the log is set level. A board facing, nailed to it on the upstream side, extends the full length of the log and into both banks. The boards should be 4 to 6 feet long and slope down (on the upstream side) 1½ inches per foot. A space of ¼ inch is left between boards to allow for swelling. The upstream ends are nailed to a light tail-pole. The main log must be reasonably straight, not less than 7 inches on the small end, of durable wood, and with a minimum of taper. (This last feature will save a lot of hand digging to make the log level.) All irregularities must be trimmed close so that the board facing sets true and level. For facing, sound, rough one-inch lumber in widths from 6 to 12 inches is suitable.

We have learned by experience that it is not necessary to make these dams high. On streams up to 15 feet wide, a height of 6 to 8 inches from the stream bed in mid-channel to the top of the board facing is adequate. But such a dam spreads the water in a thin, even sheet over the full width of the stream, and the ends of the dam are thus very vulnerable to erosion.

So the next step is to reduce the width of the spillway. The exact percentage of reduction in each instance is a matter for the builder to decide but we found that a 40 per cent opening on small streams works out well. This reduction is accomplished by the use of two deflector logs extending upstream into the bank at an angle of 45°. These are spiked to the the main log and slope up into the bank with a pitch of 1 inch per foot. It is not essential that the spillway be centered; it can be offset either way, as desired. The logs should be about the same diameter on each side of the spillway and not less than 6, preferably 9 inches in diameter.

To protect the ends of the main log, two skid logs, similar in placement to the deflectors, are set on the downstream side. These slope up to the bank with a pitch of 1 to 3 inches per foot and are joined to the main log with 2-inch planks, which prevent the stone fill from dropping through. For best results, particularly in handling running ice, the downstream ends of the skid logs must be considerably higher, and the upstream ends of the deflectors slightly higher, than the spillway. If the bank be low, a single log, parallel with the bank and spiked to the skid and deflector, will be sufficient finish. For higher banks, one or even two steps will be needed. When the timber work is completed, gravel is swept over the board face and the deflectors are filled with stones. Rocks weighing 20 to 50 pounds are best.

As the timber must be both durable and reasonably straight, the best species are hemlock, tamarack or cedar. On small streams, treated pine fence posts, available through your farm supply store, will do very well.

STRAIGHT log dams do not impound a pool behind them but rather, they dig one into the bed below—where the water plunges over. Therefor, they should be placed somewhat below an existing pool, near the head of the riffles. They will dig an entirely new pool without interfering with the present one, and there will be plenty of room on the riffles below to spread the gravel that is dug out of the pool.

Here is a productive, meaningful conservation project suitable for young and old, especially Explorer Scouts. Try one some Summer week-end on your favorite trout brook, and don't delay; August and September, when the water is normally low, is the best season for this work.

—Dave Cook

CONSERVATION GOOD TURN

by Ted S. Pettit,

Conservation Director, National Council, Boy Scouts of America

IN the long list of Boy Scout national good turns that started in 1912, few if any have attracted as much public interest or long term boy participation as the 1954 National Conservation Good Turn. In a report presented to President Eisenhower in the White House during Scout Week on the Conservation Good Turn accomplishment, John M. Schiff of New York, President of the Boy Scouts of America, and Dr. Arthur A. Schuck, Chief Scout Executive, said that more than 135,000 different organized unit projects had been carried out nationally in the effort to help arouse public recognition of the need for adequate protection and wise management of America's soil, water, mineral, forest, grassland, and wildlife resources.

These nation-wide activities, which consisted of 41,721 projects in soil and water conservation, 38,125 projects in forestry, 29,323 projects in wildlife and fish conservation, and 30,450 projects in outdoor manners, resulted in some rather spectacular statistics:

During 1954, Cub Scouts, Boy Scouts, and Explorers planted some 6,192,753 trees over the country; enough, if they had been planted in one straight row, to reach from New York to Honolulu. Three and one-third million conservation posters were put up. More than 561,675 hours were spent helping conservation officials in outdoor manners campaigns—the equivalent of 23,403 man-days of work spent cleaning up roadsides, parks, public campsites, and other recreation areas. A total of 55,346 nesting boxes for woodducks, squirrels, racoons, and songbirds were built and set out (enough nesting boxes to produce one-third of a million additional birds and animals to swell the wildlife population of this country). More than 781,955 feet of streams and lake shore were improved, a distance equal to the shore line of the Hudson from New York to Albany.

The many other activities of the Conservation Good Turn illustrate equally well what can be accomplished when boy power is harnessed toward constructive ends.

The following accomplishment in New York was reported to the President:

Soil and Water

Soil and water resources are basic to the economy and health of any nation.

Bank cribbing

From the soil come food and fiber so necessary for a healthy, contented people. Water is essential in the manufacture of products necessary in everyday life, as well as for personal human needs. Together, soil and water represent the basic natural wealth of our nation, and their wise management now and in the future will help guarantee our ability to defend our democracy and fight for a free world.

Scout projects in soil and water conservation were designed to teach boys both the importance of soil and water resources and some of the techniques necessary in their wise use. In New York State:

21,946 feet of stream and lake shore improved to prevent erosion and make water more suitable for recreation, fish and wildlife; 74,859 feet of hedgerows planted to protect topsoil from wind erosion and to provide food and cover for wildlife; 341 eroding gullies worked on

Reforestation

to prevent further loss of soil and to help rebuild the land for agricultural use; 350 acres of land planted in grass to provide protection for valuable topsoil, prevent too rapid water runoff, and to develop land for better livestock pasture.

Forestry

The forests of our nation, public and private, are essential to our welfare. They provide us with a host of products necessary and useful in our everyday lives, and each day new wood products are developed to make our lives healthier and happier. But our forests also guard our watersheds and help insure a year-round supply of water so necessary for our personal needs and the production of food, fiber, and manufactured products. Moreover, our forests provide a place for the Boy Scouts of America to camp, to play and to learn; all important in an outdoor character-building program for boys.

Scout projects in forestry were planned to teach boys the importance of forest resources and at the same time to demonstrate some of the practices necessary for the sustained yield of all forest benefits. Following is a summary of accomplishment in New York in forest conservation:

1,120,384 seedling trees planted. When they mature they will provide lumber, paper pulp, and many other products. Meanwhile they will help protect watersheds and provide places for healthy, outdoor recreation; 2,024 acres of woodlot improved by selective cutting, fire prevention and insect and disease control so that today's forests may be even more productive in the future; 177 forest fires fought. While only a small percentage of the total that burned over New York in 1954, still dramatic proof of what can be accomplished by trained crews of boys and young men, always ready to serve in time of emergency; 300,025 fire prevention posters distributed in a campaign to reduce forest fires that destroy millions of trees each year and to prevent home fires that destroy the products of our forests.

Fish and Wildlife

To members of the Boy Scouts of America, and to millions of other Americans, fish and wildlife are primarily a source of healthy, outdoor recreation. Whether one hunts with camera, binoculars, or gun, wildlife provides a healthy hobby for millions.

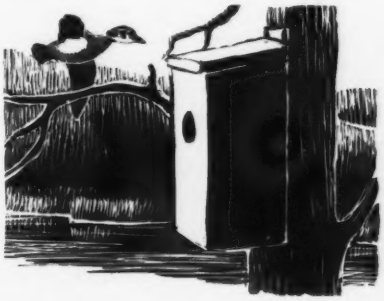
Scout projects in fish and wildlife management were planned to teach boys how

to improve the natural environment. The following summary illustrates the nature of work done in New York:

60,879 food shrubs for wildlife planted and maintained to provide natural food and cover and thus increase living space and the food supply; 2,040 nesting boxes built and erected for songbirds, woodducks, squirrels and raccoons; 74,859 feet of hedgerows planted to protect topsoil from wind erosion and to provide food and cover for wildlife; 648 brush piles built to provide cover and food for songbirds and game animals; 332 fish conservation projects carried out to help improve sport fishing.

Outdoor Manners

Scouting has long taught boys to "leave the outdoors better than they found it," the interpretation being that no visible sign should be left showing that Scouts "had been there." In recent years, co-operating with the National Park Service, the U. S. Forest Service, state forest and park agencies, and with the recently founded "Keep America Beautiful," the



Home for wood duck

Boy Scouts of America have put even greater emphasis on good manners. So:

30,374 "Good Manners" posters distributed to key places in local communities; 3,405 hours spent helping clean up roadsides, parks, and other recreation areas, in the belief that the elimination of present litter might help prevent future scattering of rubbish through thoughtlessness; 662 talks given and exhibits built in an effort to arouse public recognition of the need for better outdoor manners.

Other Conservation Good Turns

1,116 exhibits built and displayed in public places to help arouse public recognition of the need for adequate protection and wise management of America's natural resources; 2,509 talks given by Scouts to public gatherings and by conservation officials to Scout groups in a public conservation educational program; 952 demonstrations in gun and hunting safety before public groups in an effort to reduce to a minimum accidents that result

Keeping it tidy

in death or serious injury; 872 demonstrations in fishing and boating safety to help make America's most popular participant sports even safer.

Specific Activities

It probably is not fair to single out individual Cub Packs, Scout Troops or Explorer Scout units who took an active part in the Conservation Good Turn. But such a process is necessary to show some of the specific activities that were carried out a boy level. Altogether, 1,885 Scout units in New York State received a special citation presented by the Secretaries of the U. S. Departments of Agriculture and the Interior indicating outstanding participation in the Conservation Good Turn. Many more units participated, but not so actively.

Among the more significant projects carried out were: Auburn—distribution of the booklet, "The Fight to Save our Waters," to every school child in Cayuga County above the third grade; 150,342 trees planted; 125 woodduck nesting boxes built and set out. Le Roy—Conservation float in Community Chest parade; 472 hunter safety demonstrations given; built farm pond on campsite. Binghamton—112,000 trees planted; regular weekly TV shows on conservation; regular radio programs on conservation. Glens Falls—2,111 feet of streamshore improved; 150 woodduck nesting boxes built and set out; distribution of conservation comic books to Scouts and school children.

Buffalo — 7,000 feet of hedgerows planted for wildlife; five-year conservation plan developed for campsite; special radio and TV programs on conservation; special arrangements for Conservation Sunday and Sabbath in churches and synagogues in the area. Ithaca—conservation exhibits at county fairs; five special store window displays on conservation; tent caterpillar eradication projects. Mayville—2,000 feet of hedgerows planted; 12 panfish derbies held; 2,000 foodshrubs planted for wildlife. Lockport—10 bushels of black walnuts planted; 1,300 feet of lakeshore improved to prevent erosion.

Mineola—4,600 feet of lakeshore improved to prevent erosion; 185 woodduck nesting boxes built and set out. Syracuse —7,200 feet of hedgerows planted; 13,715 feet of streams improved for better fishing; 11,500 food shrubs planted; conservation window display contest. Geneva —271,000 trees planted. Oneonta—45,000 feet of food shrubs for wildlife planted; county-wide fire prevention campaign conducted. Saranac Lake—Eight miles of hiking trails cleared; assisted in stocking more than 30,000 fish. Olean—25,000 food shrubs for wildlife planted; 65 woodduck nesting boxes built and set out. Greater New York—6,800 feet of streamshore improved to prevent erosion; 242

Water safety

brush piles for wildlife built; 218 woodduck nesting boxes built and set out; 113 hunter safety demonstrations held. Poughkeepsie—3,000 "litter bags" made by Cubs and distributed to motorists for disposal of rubbish; 17 trash cans made and distributed for collection of trash along roadsides and in parks. Cortland—presentation of conservation books to local library.

Another interesting feature of the Conservation Good Turn across the State were some 47 conservation *camporees.* A "conservation camporee" for the non-Scouter, is a demonstration of good camping by a group of Scout Troops, and at the same time a demonstration of good conservation practices. The purpose of the camporee is to teach boys, as well as the adults who attend, the importance of the conservation of natural resources and some of the methods used. It is estimated

that close to 50,000 people attended these conservation demonstrations.

With the beginning of the 1954 National Conservation Good Turn in March, 1954, the Secretaries of the U. S. Departments of Agriculture and the Interior announced a special recognition plan for units and individuals who had outstanding records in conservation accomplishment during the year. In each of the twelve Boy Scout regions, that cover the country, one Explorer would be selected who had done the outstanding job in the Region.

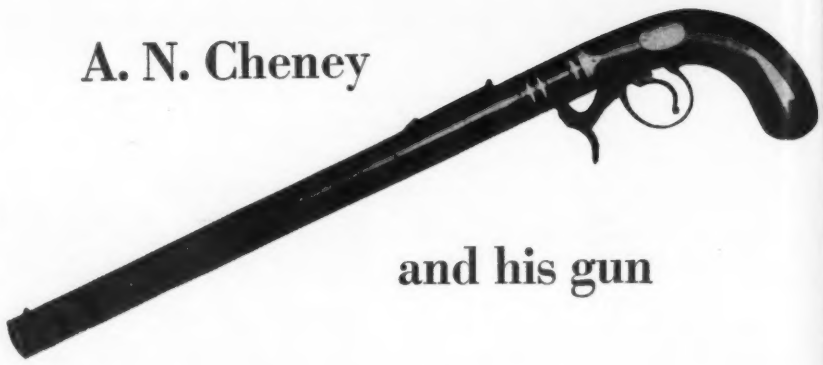
David Gerwitz, of Williamsville, N. Y. was selected as the outstanding Scout conservationist for Region II, which includes New York and New Jersey. The reward for this honor was a special citation presented to Dave by the President of the United States, in the White House on February 8, 1955. In addition, Dave and his fellow-Explorers from the other eleven Regions were taken on a conservation caravan trip during June and July in the western part of the country.

In concluding their report to President Eisenhower, Mr. Schiff and Dr. Schuck said:

"In the light of the tremendous importance of natural resources in our every day lives, as well as their vital importance to our ability to keep democracy strong, it is our feeling that training in conservation attitudes and practice is basic in training for citizenship. Although our 1954 National Conservation Good Turn has now reached its conclusion, we will continue to emphasize conservation in our program on both national and local levels. It is our long-term objective that succeeding generations of Scouts will grow into manhood with a sound conviction of the need for intelligent use of our resources and a sincere desire to practice those convictions . . . "

Most of the success of the Scout Conservation Good Turn in New York State was due to the help and co-operation of district personnel of the State Conservation Department. District Foresters, District Game Managers and District Fish Managers and their staffs and District Law Enforcement Agents worked closely with local Scout Councils in planning conservation programs for boys, and in many cases in actually conducting these activities. Of the 41 Scout Councils in New York State, 39 reported direct help from Department personnel. All Scout Executives were unanimous in expresing their appreciation to the Department for such close help and co-operation. It is the sincere hope of Scouting officials in the State that the accomplishment of the Conservation Good Turn was such that the Department will feel justified in continuing its co-operation.

A. N. Cheney and his gun



ONE of the earliest and most ardent conservationists of New York State was Albert Nelson Cheney of Glens Falls. Holden's *History of Queensbury* (page 50) gives the date of his birth as November 17th, 1813, and his birthplace as Rutland, Vermont. He moved on to Glens Falls about 1830 and later entered the mercantile business and still later engaged in the operation of a saw and grist mill. He acquired timberlands in the Adirondack wilderness and, a short time before his death, sold out to Morgan, Adsit Company. He died at Glens Falls in 1866, at the early age of 53 years. He was long prominent in public affairs, but took considerable time to follow his favorite sports of hunting and fishing.

He was a frequent contributor to that famous old magazine *Forest and Stream* and held the reputation of being a true sportsman. In Pond's *Life and Adventures of Ned Buntline*, published in 1919, on page 116, is a copy of a letter Cheney wrote to Ned thanking him for information regarding the size of trout in Blue Mountain Lake. Pond has added the following footnote: "Mr. A. Nelson Cheney, whose interesting sketches in the various sportsmen's journals were usually signed A. N. C., was one of the most practical writers of his time on angling and fish culture."

The Old Fort House Museum on Lower Broadway, Fort Edward (owned by the Fort Edward Historical Association) has a small but excellent collection of old rifles and pistols. Among the pistols is a very unusual and interesting one which once belonged to Mr. Cheney. It is a type which some collectors classify as a "boot gun." It is 20½" long overall. The barrel is 16" long and one inch in diameter. The bore is one-half inch and rifled. The stock is curved in the style usually associated with old dueling pistols and made of a dark brown curly wood to which are attached several small silver ornamental plates and butt plate. There is a tube through the handle for fastening an auxiliary stock, but this portion of the gun is missing. There are three inlaid silver bands around the barrel at the breech end and one at the muzzle. The barrel has a filed copper sight at the muzzle end and an adjustable "V" sight near the breech end.

The unusual feature is that the percussion hammer is on the underside of the barrel, with the trigger guard supplying the spring with which it is operated. We have seen rifles of such construction, but none of the books on old pistols which we own shows such a feature on a pistol of this period. On a silver name plate is engraved "A. N. Cheney, Glenns Falls." (This was the old manner of spelling the present Glens Falls.) There is no maker's name, nor any marks on the gun. Careful research, however, suggests it was made by W. J. Buskell; Van Rensselear, in his *American Firearms*, lists him as a gunsmith at Glens Falls in the 1840's, and an *underhammer* rifle bears his name. The pistol was quite probably made to order for Mr. Cheney to carry on his Adirondack trips, and from its appearance it would, no doubt, have killed a deer at a fairly good range. The underhammer would appear to have been so placed as to allow for unobstructed sighting.

Now comes the strange tale of how this gun was discovered: One John Lindsay, while working one day at the Sanders boat yard located at Moses Kill, about five miles below Fort Edward, on the old and now abandoned Champlain Canal, unearthed a small wooden chest. It contained the pistol and an old Chinese sword of the type used for decorative purposes. The only apparent explantion would seem to be that the articles were stolen — but could be so easily identified that the thief lost courage and buried them. The remarkable thing is the fine condition of the gun and sword after having been buried so many years.

Both pistol and sword were kindly loaned to the Museum by Jack Lindsay of Fort Edward, grandson of John Lindsay.

—WILLIAM H. HILL,
Fort Edward, N. Y.

Big Moose Lake

LOCATION:

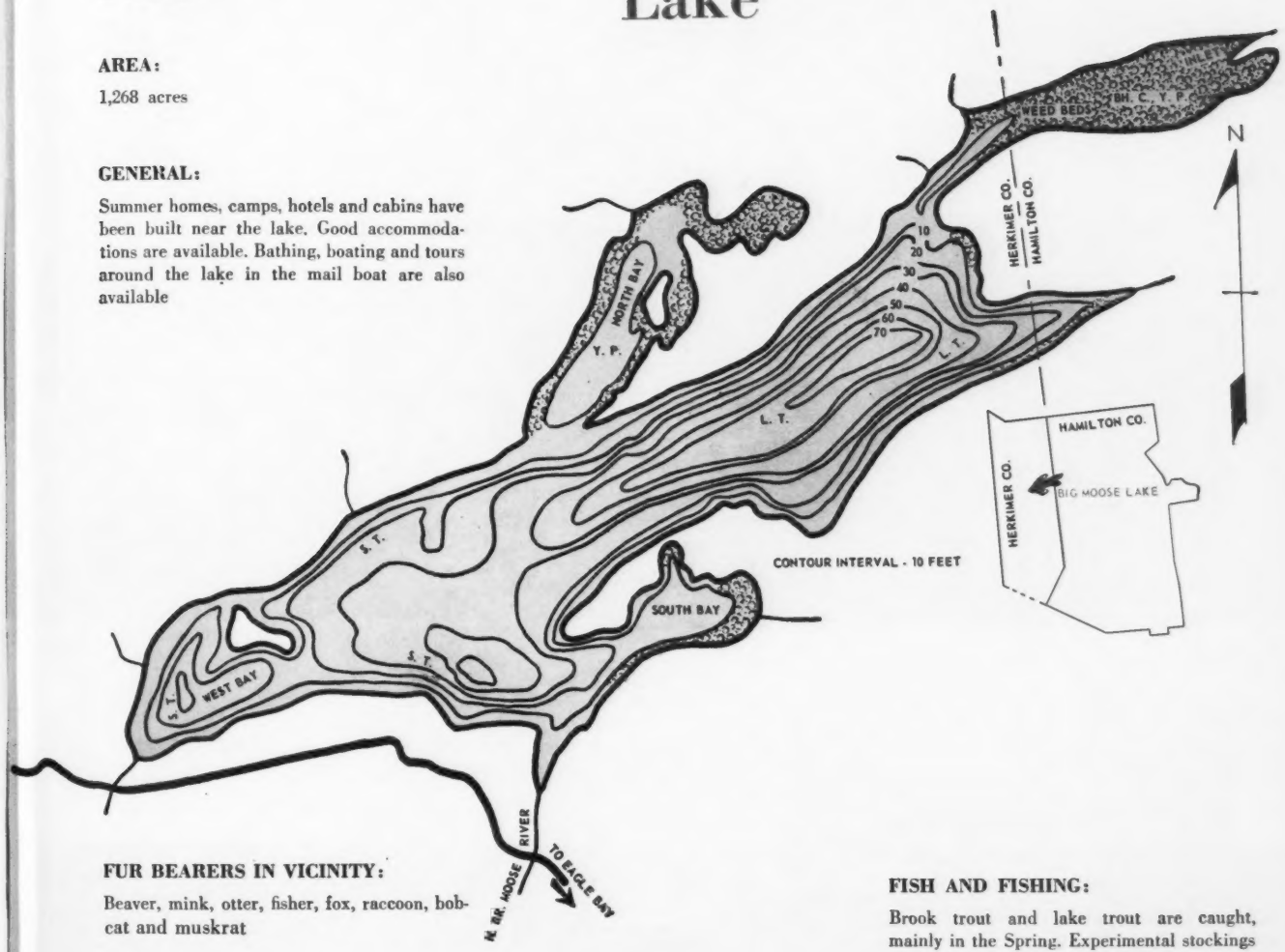
Herkimer and Hamilton counties (six miles north of Eagle Bay which is located on Routes 28 and 365)

AREA:

1,268 acres

GENERAL:

Summer homes, camps, hotels and cabins have been built near the lake. Good accommodations are available. Bathing, boating and tours around the lake in the mail boat are also available



FUR BEARERS IN VICINITY:

Beaver, mink, otter, fisher, fox, raccoon, bobcat and muskrat

HUNTING IN VICINITY:

Duck (mostly black), grouse, snowshoe rabbit, deer and bear

L.T.—Lake trout
S.T.—Brook trout
Y.P.—Yellow perch
Bh. C.—Bullheads

WATER CHARACTERISTICS:

Color: White
Transparency: Good
Temperatures: Generally cold enough for lake trout below 30 feet in mid-summer
Oxygen: Good for all fish at all depths
pH: Slightly acid

FISH AND FISHING:

Brook trout and lake trout are caught, mainly in the Spring. Experimental stockings of rainbow trout and Atlantic salmon since 1954 may provide angling for these species in the future. Some brook trout are caught near the mouths of small tributaries during the Summer. Lake trout are caught during the Summer by trolling in the deep water at the east end of the lake

Yellow perch are abundant, and provide fairly good fishing. Bullheads of fair size are common. Other species of fish occurring in the lake are: Common sunfish, common sucker, fine-scale sucker and various minnows

—W. A. Pearce,
Aquatic Biologist

Guide House at Paul Smiths

In the Adirondacks

Carry at Buttermilk Falls

Racquette Lake,
South from Camp Pine Knot

The Adirondack

The Way It Looks from the Stern Seat

In the Adirondacks

Guide-boat

Racquette River at Sweeney Carry

Long Lake, Adirondacks, North from Moose Island

All photographs and captions by Seneca Ray Stoddard, Glens Falls (1844-1917)

Micro flora and fauna in a drop of marsh water

scarcely discernible by the human eye up to a medium sized crayfish (crabs to the upstate fisherman). Readily recognized were two small relatives of the crayfish which were very abundant in the samples, several snails and their eggs tangled in a jelly mass on the aquatic vegetation, and several kinds of insects—mostly in their larval stages. Invertebrate life, primarily insects, was abundant above the water too. Mosquitos and the equally obnoxious tabanids (the deerflies and their larger relatives) were the most obvious, but insects from all the major groups were observed.

Among the vertebrates no fish were seen, for this marsh was constructed so that the maximum area would be shallow water suitable for waterfowl, and such an area does not provide satisfactory habitat for most game fish; 'though perhaps a few pan fish might survive in it. Frogs, on the contrary, were in their glory. The leopard or meadow frog was the most common but several green frogs were seen and two bullfrogs kept announcing their presence just beyond the line of vision. Closer examination of the water showed Spring peeper and toad tadpoles, indicating that these species had visited the marsh earlier in the season.

During the course of the day several snakes were noted but probably the highlight was along about mid-morning when a female garter snake came along not more than three feet from the observer and grabbed a rather lethargic May beetle which was clinging to a grass stem.

A Day in the M

THIS story might be about any one of the several hundred wildlife marshes which have been constructed during the last seven years in New York. But it happens to be about a *particular* marsh—one in Genesee County which was built some five years ago and floods about five acres. It is surrounded largely by croplands, but a patch of woodland comes up to it on one side and the area below the dam, being rough and rocky, is used for pasture. About a quarter of the pond covers an area which was grown up to trees and shrubs. Now only the ash and willow is still persisting but the dead stubs of the other species are providing shelter, nesting sites, loafing and feeding perches for the many species of wildlife which use the area. A good half of the area is grown up to marsh vegetation, largely cattail, but there are also some burreed and bulrush. The remainder of the area is open water, although partially covered by duckweed.

An early June day was chosen for watching the area, the idea being to obtain data on the amount of duck activity on the marsh. But such a variety of animal life was observed that other species deserve mention too. While the wildlife marshes were built primarily for waterfowl, actually a whole community habitat was created in which the ducks are only a small segment of the population.

No effort was made to examine in detail the microscopic animal life in this marsh, but past experience has shown that even a few drops of the water may contain myriads of simple organisms. A couple of scoops with an old pickle jar showed the great abundance and variety of macroscopic invertebrate life. The samples included many animals varying from those

One DeKay's snake was seen near the pond's edge, two ribbon snakes leisurely swimming by, and several water snakes (or perhaps two or three several times). One water snake caught a green frog but most of them seemed to be hunting for other items too. Other reptiles were represented by some twenty odd painted turtle (which were all observed sunning at one time) and by one snapping turtle moving out into the field. Later investigation showed where she had laid her eggs.

The most obvious life, due to both size and activity, about the marsh and its edges were the birds—with far too many species to mention them all. Most of the typical marsh habitat species were either seen or heard, and even without fish the pond was pleasing to the heron family. A pair of green herons was fussing around nearly all day long back in the wooded

section, and the American bitterns also were quite active. Twice the least bitterns poked their heads up above the young cattails and the great blue herons dropped into the marsh several times during the day to do some frogging. Both the Virginia and sora rails were present, but only the former was seen while the presence of the latter was recognized by its pig-like grunts. Their bigger cousins, the Florida gallinule, full of curiosity, peeked out to look over the observer and then ducked back into the cattails to laugh and snicker all the rest of the day. Two adult killdeers with three half grown young traded back and forth all day long between the fields and the marsh shore, while the friendly spotted sandpiper spent most of the day at the shore. Fish or no, the kingfisher flew by several times and a marsh hawk was nearby busily working a hayfield for mice and insects. At least three pairs of long-billed marsh wrens and half a dozen red-wing blackbirds were seen or heard. The redwings, especially the females, spent nearly as much time in the bordering fields and woods searching for insects as they did in the marsh—as did the grackles. Crows were about, but having seen the observer kept their distance. A mourning dove nest was spotted in a tree a short distance back from the water's edge. Just forty other species of the smaller woodpeckers and songbirds were either seen or heard. And it would be wrong not to mention the red-shouldered hawk yelling in the background and the turkey vultures that soared by on their sanitation chores.

Among the gamebirds, no snipe or woodcock were seen 'though in previous visits to the marsh they had been located. Shortly after sunrise at least ten different cock pheasants were heard crowing in the neighboring farmlands. During the day, while a handsome cock pheasant seemed to stand guard a short distance away, a single hen, as if in a hurry, sneaked down to the water for a drink and then slipped away through the grass, feeding as she went. Later another hen was spotted moving through the pasture (with at least ten very downy young in tow) down to the little pool below the water control structure.

Lest it be forgotten, there were ducks around too. Upon arrival a black duck was sitting on a nest built on a stump out in the water. A mixture of fern and willow made the bird almost completely hidden but with the aid of field glasses her eye and head outline could just be detected. About ten in the morning she slipped out the backside to feed and stretch for about half an hour, but she never appeared in the open water and she got back on the nest unobserved. Several times during the day a mallard with eight young nearly two weeks old was seen. Probably this was the female which had hatched off a brood some third of a mile away near a natural pothole. No male mallards or blacks were seen. A male blue-winged teal was contented feeding and loafing all day, joined by his lady briefly once in the morning and once in the afternoon. Both times she came in quietly on foot and left the same way, and never gave a clue as to where her nest might be. A female wood duck was still incubating in the box back in the flooded woodland, and once two drakes dropped in to feed for a while.

Not so many kinds of mammals were seen, but plenty of signs were there; 'coon and deer tracks were all around the marsh, and both fox and mink droppings were found. On the sod on the dyke were mouse runways and the telltale pushed-up line of dirt near the woods showed where a mole had been. Woodchucks, gray squirrels and chipmunks were seen off and on all during the day. In late afternoon an opposum was seen poking along the marsh shore, and just as the observer was leaving two cottontails appeared at the far end of the dyke.

HOW many different kinds of invertebrates inhabited this marsh and its suburbs would be difficult to say—but probably several hundred as a minimum guess. And just short of a hundred different species of vertebrates were either seen, or identified by signs, while another twenty-five could be added from previous observations.

Certainly many of these species might have been around regardless of the marsh, but the indisputable fact is that the construction of this marsh created a community center, so to speak, enabling more species to live in close association with each other. The marshes have been built for ducks. But obviously they are serving many other forms of wildlife too.

—DIRCK BENSON,
Game Research Investigator

e Marsh

Spear Fishing

SPEARING, the principal means used by the Indians to take fish, is one of the oldest fish-getting methods known. As the emphasis has changed from spearing for food to spearing for sport, the popularity of this type of fishing has continued to grow, and spearfishing equipment takes an increasingly prominent place in the windows of our sporting goods stores.

Spearing plays an important part in today's fishing picture in two ways. It furnishes good sport, particularly during the late Winter and early Spring when comparatively little fishing or other forms of outdoor recreation are available. And it provides a means of encouraging the harvest and utilization of coarse fish such as carp and suckers which, when abundant, may be detrimental to more desirable species.

As with most other aspects of modern life, there have been recent innovations affecting spearing. Most notable are the development of compressed gas, explosive or mechanically-operated spear guns, together with various devices for underwater swimming including masks, breathing devices and fins. Availability of this new equipment has increased the interest in use of spears to take fish and has led to many inquiries about regulations pertaining to spearing fish. This article is intended to answer most of such inquiries.

The Conservation Law provides that spears may be used *in waters not inhabited by trout* to take ling, lawyer or burbot, whitefish, mullet, carp, catfish, dogfish, bullheads, suckers, garpike, eels, herring and sheepshead — provided the Department first makes an order specifying the waters and fixing the season. Acting under this authority, the Department each year issues a *Spearing Order* setting forth the waters and seasons in which these species may be speared.

The 1955 *Spearing Order* appears in the 1955-56 Fishing Guide. This law with reference to spearing has been in effect for a long time. Since the conventional or hand-operated type of spear was the only one in existence at the time this law was written, it is apparent that this is the type of spear to which the law has reference. The Conservation Law provides also that fish, other than migratory food fish of the sea in the Marine District, shall only be taken by angling unless other methods are specifically permitted. It has been held, therefore, that since the use of spear guns is not specifically permitted by the Conservation Law, it is not permissible to use this device to take fish *in the fresh or inland waters* of the State.

But in the *Marine District* of this State (which is defined in the Conservation Law to include the waters of the Atlantic Ocean within three nautical miles from the coast line and all other tidal waters within the State, except the Hudson River northerly of the south end of Manhattan Island) the regulations are different; there are no restrictions in the Conservation Law on the manner of taking the various species of migratory food fish of the sea in the Marine District except that fluke or summer flounder less than fourteen inches in length shall be taken only by angling. Consequently, except for such fluke or flounder, there are no restrictions at the present time on the use of spear guns in the Marine District. It should be noted, however, that it is not legal to take in any manner striped bass less than sixteen inches measured to the fork of the tail, and that the selling or buying of bluefish, porgie, weakfish, mackerel, sea bass, kingfish, codfish, blackfish, and flounder less than certain lengths (as set forth in the Conservation Law) is prohibited.

With reference to other new equipment, there are no restrictions in the Conservation Law governing the use in any waters of the State of underwater swimming or diving devices. However, a 1954 amendment to the Town Law gave the towns the authority to regulate the use of underwater diving devices for swimming and fishing. Therefore, to determine whether underwater diving devices are regulated or prohibited in a particular water it is necessary to check the regulations of the town in which the water is situated.

While it is outside the scope of this article to discuss fully whether consideration should be given to amending present laws to permit the use of spear guns to take fish in our inland waters, the following points, pro and con, might be noted. On the favorable side, the legalizing of spear guns (subject to necessary restrictions, of course) might provide additional sport. In opposition, it appears questionable whether the fish species—as well as the streams and lakes themselves—are well suited to the use of spear guns. Carp and suckers comprise the bulk of the fish taken by spearing in these waters. The spearing of carp takes place mainly in the relatively shallow and often weedy parts of lakes and streams, while sucker spearing is confined for the most part to shallow, rather fast flowing parts of streams; neither of these situations is favorable for the underwater operation of spear guns. Furthermore, in using spear guns in inland waters it would be necessary to distinguish between species which may be legally taken by spears, and protected species. That problem—the problem of proper underwater indentification of fish —does not exist in the Marine District, where any species may be taken by spear guns.

Evidently, these and other possible aspects should receive careful consideration in determining whether spear guns should be permitted in inland waters. And it should be pointed out again that this is not merely an academic discussion; more and more people are buying spearing equipment of one kind or another, and naturally they want to know when and how and for what they may use it.

—W. MASON LAWRENCE,
Asst. Dir., Div. of Fish and Game

Cornell woodchipper at work on Ettenberger farm near Horseheads

Report on Wood Chippers

by Prof. E. W. Foss,
Agricultural Engineering
Cornell University

DURING the past year, we have learned a lot about the cost and operation of wood chippers as well as about the handling and utility of the chips themselves. Let's see what's new.

An 8-inch (square) throat machine will cost from $1,200 to $1,500 from either Fitchburg or Asplundh depending upon the number of knives, flywheel, pulleys. It will handle any type of material with the exception of wide slabs. A sawmill should purchase a "C-9—15" which is the same machine with a throat 8" x 15" costing about $2,000. The power unit, trailer, pulleys and belting would all be extra.

To produce bedding material, the knives should be set not over ⅛" from the drum. By leaving woody materials cut and air dried for a year (bark on), the moisture content will be reduced from 60 per cent to 30 per cent. Green softwood chips will absorb their own weight of moisture, while those same woods if dried to 15 per cent moisture would weigh half as much but would then absorb about 3½ times this reduced weight, of water. Hardwood chips are heavier and absorb less moisture—in about an inverse ratio to the weight of wood. A 128-ft. cord will contain around 90 cubic feet of solid wood which, when chipped, will occupy about 200 cubic feet. Air dried softwoods, such as pine and "light-hardwoods" such as basswood, will weigh about 24 pounds per cubic foot or 1½ to 2 tons per cord if green. The heavier hardwoods weigh twice as much.

Wood chips, when piled green, will heat in a manner similar to sawdust—enough to discolor, dry out a little, and give off some odors, but not enough to be dangerous from the standpoint of fire. The chips will absorb tremendous quantities of water if left exposed to rainy weather, so should be kept covered. Because green chips contain wood-rotting organisms, the piles should be kept out of contact with frame buildings—walls, posts, or floor—unless separated by sheet metal. Professor Trimberger of the Department of Animal Husbandry at Cornell has rated green wood chips at about $8 per ton, if dry shavings cost $20 per ton; this is on the basis of their relative value as bedding under heifers in a stanchion barn. Figuring all charges going into the making of wood chips—from the stump to the truck at the woodlot—we have been unable to produce chips for much less than $8 per ton, with chips made from hardwood logging waste running almost double this amount. Because our figures involve University labor and some machine difficulties, I believe this *can* be improved upon, but we haven't done it yet.

Average to good locations will yield about 2 tons per hour from the machine if the material is handily piled, using three men to feed the machine and one to move chips on the truck. At least 50 H.P. is required to power the machine (we have this and I wish it were 100). The machines will not deliver the fine chips very well to a high truck body without plugging the delivery spout. An elevator or blower is needed but is not yet available as standard equipment except with the Mitts & Merrill or Carthage machines. For the same knife setting, frozen wood and dry, punky wood results in much finer chips than those obtained from ordinary green wood. On the other hand, frozen wood and dry wood require considerably more power for chipping.

Wood chips have a varying effect upon plant growth. A few species such as cedar and black walnut appear definitely to retard the growth of plants when the chips are used as a mulch or plowed under. But the more common tree species in wood chip form seem to have several advantages over other forms of bedding. All wood products require around 50 pounds of nitrogen per ton to offset the temporary nitrogen deficiency that is set up when the nitrifying bacteria normally present in the soil become occupied almost entirely in the task of reducing the wood fibers to humus. Wood fragments (includes chips, sawdust, and shavings) when used as a bedding material can be applied as a top dressing with less danger of smothering grass than if straw or hay were used. When used in pen stables there is practically no trouble from "punching through" a deep manure pack as there is with long hay or straw. When cleaning out a pen stable, the manure breaks apart easier, for both the manure loader and the spreader. From a soil standpoint, the wood holds up longer as organic matter, resulting in better soil structure. Work under way by Professor George Free, of the Soil and Water Conservation Research Station, U.S.D.A., of Ithaca, will soon give definite results. The long time effect of wood chips in the soil is alkaline (potash and calcium carbonate); however, there are some temporary organic acids produced.

To sum this up, I look forward to considerable development in wood chipping machines, and the methods of handling and using the chips. Low cost fiber is needed for many purposes in agriculture and industry, but at the present time this fiber goes to waste by the square mile. I am convinced the chip business will develop.

The Hudson River Suite

by Andre Kostelanetz

The Hudson River is set to music.

A well known conductor tells how and why.

THE idea of having the majesty of the Hudson River expressed in musical terms first came to me seven years ago. It seemed only right that this magnificent and famous water-way should take its place alongside the other great rivers which have been immortalized in music—the Mississippi, Rhine, Danube, Moldau, Volga and many others.

I cannot state with positiveness what particular incident crystallized the idea. It might have been a re-reading of Washington Irving's story of the Rip Van Winkle legend; it might have been my reading of biographical accounts of Henry Hudson, the intrepid navigator; or it might have been a car-drive along the Palisades. In any case it seemed to me that the Hudson River would furnish a wealth of inspirational material, not only through its natural beauty and its tremendous importance as the harbor of the biggest city on earth, but also through its legends and history.

I first spoke about the idea to Deems Taylor, but the distinguished composer was committed to several other works at the time, and being extremely busy myself, the project had to be temporarily shelved.

Actually it wasn't until last Winter when I was conducting the New York Philharmonic Symphony at Carnegie Hall that the plan came to fruition. For one of my concerts I had scheduled Ferde Grofe's "Mississippi Suite" and as luck would have it, Mr. Grofe had come East from his home in Santa Monica, California. After the concert, which he attended, we saw quite a bit of each other and one day over lunch I broached the idea to him of composing a suite on the Hudson River. Grofe indeed seemed the ideal composer for such a work, since he had on past occasions done much in expressing the panoramic vistas of the United States in musical terms—through such works as the Grand Canyon Suite and the aforementioned Mississippi Suite. The Hudson River idea appealed to him immediately and after he had left for California I sent him the synopsis which I had carried in my mind for such a long time. I saw this proposed symphonic suite in five parts: (1) The River, (2) Henry Hudson, (3) Rip Van Winkle, (4) Albany Nightboat, (5) New York City.

In the "River" movement Ferde Grofe describes the river itself, starting with the lower reaches of the Hudson, its broad sweeping and majestic flow before it reaches the Atlantic. In this section he also interprets the beautiful, colorful cliffs and woodlands of the Palisades along its shores. A broad melodic line, with its varied embellishments, is the principal musical expression of this part, reflecting the sweep of the mighty Hudson.

The "Henry Hudson" section is a musical portrait of the famous explorer. The melody is heroic and depicts the temperament and courage of the immortal navigator, as portrayed in horns and woodwinds and thundering percussion. The music also has its wistful moments because of Hudson's tragic end.

"Rip Van Winkle," the third part of the suite, is of course a musical setting of Washington Irving's tale. It begins with Rip whistling for his dog. The dog answers with a bark. Then follows the happy stroll up the mountainside in the Catskills. Eventually Rip meets up with the dwarfish little men with their beards, playing ninepins in the ravine. The rolling of the balls sounds like thunder in the distance. Rip joins them in their festivities —and the twenty years' sleep follows. Finally he awakens. He whistles for his dog, but there is no answer. His tattered clothes, disheveled appearance, rusty barrel and rotted gun stock are all that is left. Eventually he is reunited with his daughter and finds solace with her and his grandchildren, telling them tales of Henry Hudson and his motley crew.

In trying to find the proper musical expression for Rip's whistle, Grofe asked some 20 dog owners how they were whistling for their dogs and discovered that, thematically speaking, the whistle finishes on an upsweep. The interpretation of the dog's bark was another matter again. Grofe chose to use a realistic sound here, a decision which has provided us with quite a few amusing moments. At the occasion of the world premiere in Washington we tried to find a dog that would bark on cue. But since all such trained dogs seemed to get nervous because of the orchestral sound we finally settled on a young lady who could imitate a dog's bark. For the New York premiere at the Lewisohn Stadium on July 4 we agreed to use a specially manufactured little box that by means of a resin-covered string being pulled through a narrow opening, would imitate a dog's bark. Before the concert this mechanism worked splendidly, but during the actual performance it failed us completely. Only time will tell what we will do for future performances.

Although Grofe expressed the thunder of the rolling balls of the ninepin game through the percussion section of the orchestra, there are two highlight moments when the sound must assume realistic dimensions. For these we have set up on stage—with great success and to the vast amusement of the audience—an improvised one-lane bowling alley, complete with bowler, pin-boy, ninepins and two balls. The sound derived from the actual bowling gives a most interesting and novel accent to the underlying orchestral pattern.

In the "Albany Night Boat" section we deal with an aspect of life that was extremely popular during the Twenties and for which (unjustly so) the Danube, the Seine or the Rhine are much more famous. A hauntingly beautiful melody expresses the moonlit night aboard the boat. As it glides smoothly over the water, a small jazzband begins to play on deck. There is general gaiety, laughter and dancing, while romance highlights the scene.

"New York"—with its skyline, the myriads of lights, the commotion and excitement of the big city, and the turbulent and unending flow of life—brings the suite to a climactic end.

"The Hudson at Dobbs Ferry," by Kensett
Courtesy of Victor Spark

AFTER the Washington world-premiere a little incident occurred which I hope will happen time and again. A young couple came to see us backstage. With great enthusiasm they announced that hearing the "Hudson River" had helped them solve a personal dilemma—the choice of where to spend their vacation. They now had decided to make it a tour along the banks of the Hudson, starting from up-state and going all the way.

I would say that if the beauties of this country can be discovered through the power of music, we are achieving something of which we can indeed be proud.

Forestry in Norway

THE Scandinavian countries — Norway, Sweden and Denmark — have long been known for their progressive attitude toward natural resources, particularly with regard to the management of their forests. The excerpts which we are printing here from a recent bulletin of the Norwegian Information Service should be of special interest to those among our readers who are familiar with the New York State program of assistance to private woodland owners under the Forest Practice Act.

It is worth noting that forest management in Norway is a business proposition— they practice forestry not only because it's good conservation, but because it pays. It will also be news to those who are inclined to think of Scandinavian governments as "socialistic" to learn that the same kind of technical assistance which is furnished by the state and federal branches of the government over here is operated in Norway as a private enterprise—although the raising of trees for reforestation, as well as the research on which management recommendations are based, are government activities just as they are with us.

"FOR years, Norwegian authorities have actively encouraged measures to increase timber production. A boost of about 50 per cent in the output is not considered unduly optimistic. Among the most important measures being stressed are the following: (1) Improved management of the growing stock; (2) drainage of suitable bogs and swampy forest land; and (3) extensive reforestation of coastal regions in west and north Norway. Toward the same end, the State has established a number of tree nurseries and seed drying centers. Recently, Norway has imported certain types of U. S. seeds.

"About 55 million seedlings were planted last year, an increase of 10 million compared with 1953, and the highest ever in Norway's history. Spruce seedlings comprised some 83 per cent of the total. Next year, the nation's nurseries are expected to produce about 65 million seedlings. Several American coniferous varieties, such as Sitka, Norway and Ponderosa pine, as well as Colorado spruce, are being used to reforest Norway. The Sitka species, hailing from Alaska, have been found to be especially well suited to north Norway, while the others are being used to plant new forests in west Norway.

"In Norwegian forestry, as well as in agriculture, mechanization has made rapid strides in recent years. Thus, well over 25 per cent of the 23,500 lumberjacks at work in the woods this season are equipped with one-man motor-powered chain saws. Timber transportation has also been greatly motorized, opening new possibilities for forestry. To build roads for motorized sleds, forest owners use a large number of bulldozers and other machines. The bulk of the timber, however, is still floated down far-branching rivers, extending altogether some 9,000 miles.

"Meanwhile, the Norwegian Forest Society, a private organization promoting the development of the nation's forestry, reports amazing results from its planned operation service. Primarily designed for farmers owning 50 to 400 acres of timber, the voluntary scheme is paying big dividends. By following detailed recommendations worked out by the Society's specialists, farmers have been able to increase their annual timber production by about 17 per cent in the past 10 years, despite the fact that over 20 per cent of the forest area has been set aside for new growth. At the same time, new growth has been increased by 17 per cent and the cubic quantity by 9 per cent. Containing specific directions for felling, planting and operation, the plan helps the forest owner to obtain the largest possible earnings now and in the future.

"According to forest estimator Finn P. Ludvigsen, in charge of the service, eighteen teams of estimators are presently mapping plans covering well over 400 timber tracts in many parts of the country. That is nearly twice the number that were completed in the 1952-53 operating year.

"In a recent interview with the Oslo newspaper *Aftenposten*, Mr. Ludvigsen recalled that when the Forestry Society started its production planning service back in 1942, it had especially in mind the large number of Norwegian farmers who own and operate forests, but who also go in for dairy, hay or grain farming. The program has made very substantial progress in the past five years, 'though as yet only an estimated 7 per cent of the nation's farmers have requested the Society's assistance in working out rational production plans. By contrast, all major timberland owners, whose sole profits are derived from forestry, have long ago set up long-range operating plans, usually on a 10-year basis.

"Each of the 18 teams of estimators manage to map plans for about 24 forest tracts a year. The Society now has teams in 11 provinces. The service charge is very low, running from about 20 öre (less than 3 cents in American money.—Ed.). an acre for woods of 250 acres or more, to 30 öre for those of less than 75 acres.

"The operating plan shows the forest owner precisely how he should manage in order to assure the largest possible income now and in the years ahead. It gives detailed directions for felling, planting and operation, specifying which trees should be cut in various parts of the forest and where it is most advantageous to start. By making rational use of the opportunities provided by Nature, which is the purpose of the operating plan, Mr. Ludvigsen opines that Norwegian forest owners could boost their income by 50 per cent.

"The main job in setting up an operating plan consists of making a comprehensive estimate as to the condition of the woods, with regard to such matters as potential yield, cubic content, new plantings and the age of the trees. The various recommendations are clearly indicated on a map that is provided as part of the service.

"The triple objective of the recommendations made in the production plan is to help the farmer increase his net income from the woods, promote full exploitation of the natural opportunities, and assure even operation in the future. In Mr. Ludvigsen's opinion, a production plan is essential in order to achieve the best possible economic result from a forest. Any forest owner who fails to set up a plan, he says, is working in a blind alley."

Deer Hunting—
Then and Now

THE last 50 years have witnessed a tremendous change in New York's deer population. Shortly before the turn of the century deer in the State reached their lowest ebb in history. Currently they have reached an all time high, and although the number per hunter is probably less than it was in 1900, in many localities deer have become too numerous for compatibility with other interests, primarily agriculture. The Conservation Department has the responsibility of managing this resource in the best interests of all *the people. The following article recounts some of the efforts made in this direction, and traces the history of deer and deer hunting in this State.*

THE painting reproduced on the cover of this issue, by Winslow Homer in 1892, portrays a form of deer hunting that has long since vanished from the New York scene. This and a number of other contemporary hunting methods were a product of the times and of the region where they were most widely practiced—the Adirondacks—although by modern standards they would of course be considered overliberal and unsportsmanlike. As the "North Woods" became more and more accessible, as the number of hunters increased, and as firearms were improved, such practices could no longer be tolerated. Hounding, as well as jacking, killing deer in the water, and the sale of venison, had to be abolished. So also did the taking of an unlimited number of deer by the same person.

But in Homer's day Summer hunting was commonplace and the most popular methods were hounding and jacking. The success of hounding, as usually practiced, depended on the deer's instinctive seeking of water when hard-pressed by dogs. The following, from an 1872 issue of *American Sportsman,* provides a revealing view of what was considered sport in that bygone era.

"There was great excitement on the piazza of Paul Smith's Hotel. The ladies were alive to the matter that now absorbed the attention of all hands. They were drawing lots!

"Lots for what? A grand hunt for deer was to come off the next day. The arrangements and management are so peculiar that you will be interested in a brief account. You know that to shoot a deer in the Adirondacks is a deed to be proud of, to boast of with that modest self-complacency which hangs around all truly great sportsmen. They come home from their Summer campaign in the wilderness laden with spoils of victory. Their spear and their bow, or rather rifle, got them the trophies that now adorn their halls; the branching antlers of a noble buck are stuck upon the wall of their dining room; and perhaps the skin has been made into an elegent mat that stretches itself before the fire. Admiring friends, who have never been in the woods, listen with mute wonder while the proud host relates the perils of the forest in which he pursued the monarch of the herd and brought him low with the unerring aim of his trusty rifle. Perhaps there is little pleasure in this world superior to that of the gallant hunter retailing to unsophisticated listeners his triumphs in the field.

"The brave, hardy, eager gentlemen from New York and other cities were now prepared to go out the next morning to renew the chase. They go two or three times a week, and as the hunt is attended with great expense, exposure and fatigue, and many are to share in it, it is just that each should have a fair chance to bag the game and glory of the day. The shore of the lake is laid off into sections, and each section has its point of observation. These points are some considerable distance asunder, and lots are drawn by which the station of each one going to join the hunt is determined. This allotment is made overnight, that when early morning comes, each deer slayer may repair to his post, and with all the patience he may possess, await the issue. With him, in a light boat, is the guide, who rows and knows the spot to which his man is assigned. The boat soon reaches the point, and nothing is to be done but to wait, in it or on the shore, as the weary and anxious sportsman pleases. Thus the lake is environed with the watchful picket guardsmen.

"In the meantime, a real huntsman, a paid and experienced man of the woods, enters the forest, with a leash of hounds, some six or eight, attached to his belt. Well in, he lets off a dog, trained to the service and eager to have a run, who begins at once to get upon the trail of a deer. The hunter goes on and lets off another dog, and then another, until he has started the whole pack, who, running in circles, scour the whole forest, and seldom fail to scare up a buck. The moment the dog strikes the scent, he begins to bark, and the glad sound meets the distant ears of the waiting watchers on the lake. The deer, alarmed, instinctively takes to the water as the only way to break the trail and drive the dog off his scent, by which he is keeping up the chase. The noble animal rushes through the forest into the lake to swim across. He is the prize of the boat nearest to which he takes to the water. The guide rows the boat in pursuit of him, and being able to row very much more rapidly than the poor beast can swim, has no difficulty whatever in overtaking him. When he has come up so near to him that the merest bungler with a gun, who could not hit a barn door across the road, can now put the muzzle of the gun into the ear of the animal if he pleases, the gallant Nimrod from the avenue of

Courtesy of National Gallery of Art, Washington, D. C. The gift of Stephen C. Clark.

Oil painting done from watercolor reproduced on the cover. Homer preferred the watercolor; thought it one of his best.

Courtesy Charles R. Henschel

"Burnt Mountain" by Winslow Homer, 1892

the city blazes away with his new rifle, lodges the bullet in the brain of the beast and his work is done. If the deer, however, will not keep still long enough to be shot in this way, the guide takes him by the tail and holds him while the accomplished sportsman shoots him in the head. It sometimes occurs that even then, with the buck thus held by the tail at one end and the rifle in the hands of an excited shooter at the other, the ball goes all abroad and the game is not hit. Then the guide, with an oar or with his own stalwart arms, manages to get the animal's head under water, and so drowns him. But in the best of the business, it requires the same amount of science, skill, valor and endurance to kill a deer that it would to go out to the barn and kill a cow. Give the cow the run of the yard, and it would be more of a feat to bring her down with the rifle than to slay a deer in the Adirondacks!"

JACKING, or "floating," ranked second in popularity. Here also, water played a key role, since success depended on the deer's habit of frequenting the margins of ponds and the "stillwaters" of streams at night to feed. For a description, one can do no better than to quote from an account by C. Hart Merriam published in 1886:

"Floating consists in paddling up to a deer, at night, with a light called a jack fastened above the bow of the boat, and so arranged that it casts the whole light ahead, leaving the boat and contents in exaggerated darkness. The jack of our ancestors (used even within the brief period of my own recollection), was a very simple affair, constructed where occasion required. It consisted of a torch, or sometimes a tallow candle, fastened upon a piece of bark, and backed by a bark reflector. This rude illuminator was attached to a stick, three or four feet long, that stood upright in the bow. The stick, or standard of the primitive jack, still remains and now supports a lantern which is closed in on three sides so that all the light shall be thrown in front. Some sort of a reflector is generally used to concentrate and project the rays to a greater distance. Sometimes the light is fastened to the hat.

"Two people constitute a floating party, and the modus operandi *is as follows: The sportsman sits on the front seat, with his legs tucked under the bow in a position that is, at the start, anything but agreeable, and becomes distressingly uncomfortable as hour after hour drags slowly on. He dare not move lest the noise thus made should alarm the deer. The guide sits in the stern and must be expert with the paddle, for it is his duty to propel the boat steadily and noiselessly within easy range of the wary deer.*

"The locality is usually selected in the day-time, and is generally some marsh-bordered bay, abounding in lily-pads, or a similar place along the banks of a sluggish stream. On nearing the feeding ground not a word is spoken, not even in a whisper, and the hunters strain eye and ear to discover the whereabouts of the quarry. The light is turned in such a way that it covers the shore as the boat glides silently on, for the deer may be gazing at it from the bank, standing motionless and silent. Indeed, he is often seen, not more than a couple of boat lengths away, before any sound has forewarned them of his presence.

"Bright moonlight nights are undesirable because the animal can then detect the outline of the boat, and is apt to take to the woods without delay.

"Let us note the course of events in an ordinary floating expedition, premising only that the sportsman is somewhat of a novice. . . . The party eat an early supper and set out at once in order to reach the spot before the gathering darkness obscures the way. . . .

"The start is well timed . . . when they emerge upon the open shore of a small and shallow lake and launch the canoe in its black but unruffled water. Night is upon them, and with it the flies and mosquitoes. Tar oil is applied freely to face and hands, the jack is lit and placed, and they step quietly into the boat and move noiselessly off—the sportsman on the front seat, his overcoat buttoned up to his chin, and his feet crowded uncomfortably under the bow, one on each side of the jack-stick; the guide astern, silently plying his paddle. The nearest marsh-bordered bay is soon reached, and as the light skims along the bank, falling in turn upon clumps of bushes, old logs and stumps, and the dark cone-like forms of the young spruce and balsams, the sportsman's expectation is at its highest pitch; he feels his heart beat faster and faster, and grasps his gun tighter and tighter, imagining that each fantastic shadow will show the white tail of a retreating buck. The suspense is of short duration, for this feeding-ground is passed without so much as the sound of a moving branch to indicate the presence of any animal larger than the flies that swarm about his head. Now comes a pull of half a mile before the next ground is reached, which would afford the sportsman ample time to compose himself, were it not for the armies of pestiferous flies and mosquitoes that demand, and receive, his undivided attention. The bottle of tar oil is produced, and a thorough smearing grants temporary respite. No sooner is this accomplished than the next favorable shore for deer is fast appearing over the port bow. . . . It is decided to run up the inlet, a marshy stream averaging less than a boat's length in width . . . Presently a noise is heard ahead: It is vague and indefinite, but evidently something moving. The boat comes nearer; the noise ceases; it is heard again. The sight is strained to penetrate the bushes along the shore, but nothing is discovered. Hark! Something dripping in the water; the eyes are lowered, and there, on a log that projects into the stream, almost within reach from the bow, is seen the form of a large porcupine, lazily eating lily-pads and gazing stupidly at the light. The sportsman is tempted to fire, but controls his disgust and says nothing. A bend in the tortuous channel is passed, and another, and—splash, splash, splash: It is the unmistakable sound of a deer wading in the creek. Then all is still again. . . . The boat is slackened and the light made, in turn, to cover both shores. Moments seem like hours, and the flies are entirely forgotten. But what has become of the game? Inadvertently the gun rubs against the jack-stick when, simultaneously, is heard the sharp shrill whistle of a startled buck, from behind a bush to the right, and the fading sound of crackling branches announces his disappearance in the forest.

"The flies now seem worse than ever, and so they really are, for the boat is passing through their very headquarters, and the bright light attracts them to the spot. Continuing the course up the sluggish stream it is some time before anything occurs to divert the sportsman's attention from these tormenting insects, which constantly get into the eyes, nose, and mouth, 'till, harassed, exasperated, and well nigh distracted, he applies his only remedy, the tar oil.

"Another hour passes wearily away. . . . The sportsman, now too cold to sleep, feels the boat slacken its headway and stop. He wonders if the guide has dropped off in a doze and is about to turn and investigate when the word

"A Good Shot—Adirondacks" by Winslow Homer

Courtesy Charles R. Henschel

"shoot," uttered in a low whisper, falls upon his ears. He doesn't see anything to shoot, but on looking more closely, discovers, partly hidden behind a bush, the form of a deer, as motionless as a statue, gazing inquiringly at the light. Raising the gun nervously to his shoulder he fires. A desperate leap, a wild plunge ahead, a heavy fall, and a noble buck lies dead upon the bank."

Deer taken by hounding were usually recovered and used. Jacking, however, was notoriously wasteful. Not only did a large proportion of the shots merely wound deer which escaped to die and not be found, but, because a deer's Summer coat has little buoyancy, many that were killed outright sank and were lost. Competent observers at the time estimated that four deer were killed and lost for every one actually brought to bag.

Such was deer hunting in the Adirondacks in the days of our grandfathers. To be sure, still hunting was practiced by some, but they were in the minority, chiefly "natives" who wanted a good "eating deer" in the Fall.

Since then the picture has changed greatly. To the present-day New York sportsman deer hunting is associated with the late Fall when the leaves are down and there is a prospect of tracking snow and ice on the ponds. In fact, the entire conception of deer hunting today is so far removed from what it was in the early '90's that it may be of interest to trace the evolution of regulations governing the sport in this State and their relationship to trends in deer abundance.

FOR nearly 250 years following the settlement of New Amsterdam, there was virtually no regulation. To the early explorer, venison and buckskin supplied vital needs, as they had to the Indians before him. Although he seldom shot for sport, he took deer the year around. Pioneer settlers followed the same practices and passed them on for generations. By about 1880, when farm acreage in New York reached its maximum, deer had been almost wholly eliminated outside the Adirondack forest. Naturally, scarcity was first felt near the larger and older communities. In fact, as early as 1705 the Colony of New York prohibited the taking of deer between January 1 and August 1, and by 1788 concern had become so widespread that the first Statewide deer law was passed providing a closed season of the same duration. But enforcement was lax and hunting went on almost at will at all seasons, especially in the frontier districts.

This situation continued until shortly after the Civil War when county boards of supervisors were authorized to elect game constables who were permitted, under the moiety system, to collect half the residue of fines after the expenses of a case had been paid. Then, in 1880, the Governor was empowered to appoint eight game and fish protectors—and the foundation thus was laid for our present law enforcement staff. Still violation of the law was rampant and there were no restrictions on methods or the number of deer a person could take. This was the heyday of lumbering in the Adirondacks. Market hunting flourished—the logging camps and Summer hotels affording a convenient outlet. Deer abundance continued to decline.

About the same time, however, hunting for sport began to grow in popularity, and with it a demand for more deer. A need for conservation measures was recognized. The first bag limit (three deer per person per season) was established in 1886 and in the same year "crusting" (taking deer in Winter when bogged down in snow) was prohibited. In 1895 the open season was shortened to August 16-October 31, and the number of deer per person was reduced to two, only one of which could be transported out of the woods. In this year also the sale of venison during the closed season was prohibited. "Hounding" was outlawed in 1897, as were "jacking" and killing deer in the water. In 1904 night hunting was forbidden. By 1908 an open season for deer hunting was provided (outside Long Island) only in the Adirondack region and in Dutchess and portions of Sullivan and Orange counties. In 1911 the sale of wild venison was made wholly illegal, in 1912 the "buck law" was passed and in 1919 the limit per person was restricted to one. By 1920 the season in the Adirondacks had been reduced to one month (October 15-November 15). Finally, in 1926 provision was made for a special deer license and mandatory reporting to the Department of deer taken.

THESE regulations reflect almost directly the abundance and availability of deer at the time they were written. In 1900 there were few deer outside the Adirondack region. But during the next two decades a gradual increase took place (especially in the Catskills) as a result of both law enforcement and improved range conditions. And following World War I, economic changes resulted in the abandonment of large areas of sub-marginal farmland, particularly in the central and western parts of the State; such land rapidly became highly productive range for deer, and the deer were quick to move into it. Once a nucleus of breeding stock was established, deer abundance rose by leaps and bounds. (An important factor in the rate of this increase—in its initial phases at least—was the fact that deer had been absent from the region so long that there was little tradition of using venison as a staple in the family larder.) Beginning with Schoharie County in 1931* and Otsego in 1936, the area open to deer hunting has been extended until the sport now may be enjoyed in every county except Montgomery (outside greater New York and Long Island).

UNTIL about 1930, few questioned the desirability of more deer. In a few years, however, it became evident that a conflict had developed between deer and agriculture in the Southern Tier and adjacent counties. There, woodlands and abandoned farms are interspersed with productive agricultural land. While the former constitute the mainstay of the deer population, these animals (like other wildlife species) are quick to take advantage of the opportunities afforded to feed on highly palatable crops. As crop damage became more and more serious, the realization gradually crystallized that in this region continued increase in the deer population, however much desired by the sportsman, could not be reconciled with the basic agricultural economy. Furthermore, it was evident that the hunting of bucks alone did not sufficiently limit such increase; reduction in the number of does offered the only effective solution.

Accordingly, provision was made in the Laws of 1938 authorizing the Conservation Commissioner to permit limited hunting for antlerless deer to meet situations of this kind. The first such open season was declared in Steuben County in 1941. Since then, hunting for antlerless deer, or for deer of either sex, has been permitted at intervals over various portions of the region. In each case, deer abundance was reduced—but not for long. The herd recovered rapidly, indicating that such control is only temporary and that repeated reductions would be necessary from time to time to maintain a reasonably stable population level.

Population control through taking antlerless deer has also been found necessary in forested regions such as the central Adirondacks and Catskills. There the problem is one of deer overtaxing the carrying capacity of the range and is more localized, being chiefly associated with wintering areas. In the Adirondacks especially, it involves primarily a number of extensive interior tracts where hunting pressure is relatively light. In the more settled sections, illegal hunting the year around has kept the herd in check. The first recent open season for antlerless deer

* Several Catskill counties had had a 2-week season for some years and for one year (1928) an open season had been held in every county in the State.

in the Adirondacks was held in 1943. It embraced the entire area of 10 counties, however, and was least effective where most needed. In 1954, the Legislature approved a bill specifically delineating the major problem areas, and last Fall both antlered and antlerless deer were hunted in two of these under a quota system. In these areas recurrent harvesting of both sexes seems called for if a healthy balance is to be maintained between the deer population and the carrying capacity of the range.

A FEW comparisons will give some idea of the magnitude of the change that has taken place in the last half century. Deer reached their lowest ebb in New York in the mid-1890's when the population probably did not exceed 40,000. Now it approaches 400,000. In 1895, the Commission compiled information indicating a deer kill of 4,900 (2,694 by hounding, 1,233 by jacking, 973 by still hunting). This was for the Adirondacks; deer hunting elsewhere was negligible. Unfortuately, the number of deer hunters at that time is not known. In 1930 there were about 75,000 hunters and 7,154 deer (all bucks) were reported taken. In 1954, the figures were 400,000 and 30,528, respectively, the latter including 1,963 antlerless deer. In 1952, when 30 counties were open to the taking of deer of either sex, the total reported take was 42,080 of which 18,529 were antlerless. (It may be noted, too, that recent studies have shown that only about 76 per cent of the deer legally taken each year are reported.) And since 1908, the territory open to deer hunting has increased some 300 per cent, with most of this expansion taken place.

Although the outlawing of overliberal hunting methods was vigorously opposed by many people, for a variety of reasons, the wisdom of added restrictions was evident to the great majority; what had been quite legitimate under frontier conditions simply could no longer be tolerated. Since that time, deer abundance, fostered by range improvement as well as by the regulation of hunting, has increased so greatly that now substantial numbers occur throughout the State—with *too many* in certain localities.

So the pendulum has begun to swing back. Today good management, paradoxically, calls for *liberalizing* regulations—taking antlerless deer and in some cases allowing more than one deer per hunter. But now it's done on a planned basis according to demonstrated need, not in the indiscriminate manner of yesterday.

—ROBERT W. DARROW,
Conservation Publications Editor

FROGS and TOADS of New York

by Albert H. Wright, Ithaca

THERE are Summer storms, the "old wives" say, when frogs and toads rain from the heavens. And they say, too, that your eyes will turn green if you pick them up, or at least you'll get warts. And worst of all, they predict that should you kill one "you will have blood in your milk."

But frogs and toads, far from being the monsters they've been pictured, are not only harmless to man; they are among his most dependable benefactors. The farmer and gardener can be thankful he has working for him the best insect traps ever developed. Eternally on the job, the frogs' and toads' sharp eyes and adhesive coated, flip-spring tongues account for insect pests in wholesale lots. Moreover, frogs and toads play an important role as buffers, sating the appetites of predators to the advantage of fish and game.

And then, for the gourmet, there's frogs' legs sautéed in butter. And for every Winter-wearied ear there's the cheeriest note of early Spring — the nightly song of the peepers.

In New York there are 13 varieties of these public benefactors: Six frogs of the genus *Rana;* two toads, genus *Bufo;* one spadefoot toad; four tree frogs: Cricket frog, swamp frog, peeper and tree toad. Each variety gives out with a distinctive call or croak but some are more musical (and also more vociferous) than others, the males of most species possessing air sacs to amplify their breeding calls. All treefrogs, toad and spadefoot males have single rounded throat sacs. In the case of frogs, the ear sacs or the chin swells out to provide sound volume for Spring chorusing.

With courtship singing under way, the males precede the females to the water. The eggs are fertilized as they issue from the vent of the female. The eggs may be single, in strings, in bands or cylinders, or in clumps. After from three to 25 days (depending on species and the temperature of the water) they hatch into the external gill stage for a day or so; then they become tadpoles or pollywogs. All our frog and toad species undergo such transformation during the same season the egg is laid except for the greenfrog and bullfrog, which may "winter over" one or two years.

Spadefoots

SPADEFOOT (*Scaphiopus holbrooki,* after Dr. J. E. Holbrook, famous herpetologist): Short, broad, squat, in body, pupil vertical (by day); glandular bodies back of eye and ear small or rounded; skin smooth; no crests or ridges on head or back of eye; two glands on breast; a large hard-edged growth on inner sole of hind foot (hence "spadefoot"). Usually two light distinct yellowish stripes on back. Lives in shallow burrows in ground. These nocturnal forms breed in all kinds of temporary pools as well as permanent ponds from March to September in very rainy periods, their noisy choruses often occupying only one night. The egg strings merge at the vent to make bands or cylindrical masses. The small tadpoles, 1⅛ inches long, transform from July to September into .3- to .5-inch frogs.

Toads

AMERICAN TOAD (*Bufo terrestris americanus,* from Latin, *terrestial* plus *American*): This short, fat warty toad, two to 4½ inches in length, has very spiney warts on hind legs. Either side of mid-dorsal stripe are 3 or 4 pairs of dark spots, on each of which is one or sometimes two large warts; voice a musical trill. They breed from late March to August 1, laying eggs in strings. Eggs hatch into black tadpoles only about one inch long transforming (from June to August) in 50 to 65 days into toadlets, ¼ to ½ inch. One of our most useful citizens because of its insect diet and frequent association with gardens.

FOWLER'S TOAD (*Bufo woodhousei fowleri,* after S. W. Woodhouse and S. P. Fowler): This toad, although uniformly warted, has distinguishing small warts on legs, two or more small warts on each large dorsal spot; usually a pectoral spot; yellow or buff mid-dorsal stripe; voice shrill and harsh. It occurs on beaches, lake shores, riverbanks; in fields, pastures, gardens, sand dunes, pine barrens. Egg strings usually laid two or three weeks after American toad —in mid-April to mid-August. Transformation in mid-June to August into toadlets, 0.5 inch.

(*Continued on page 26*)

FROGS and TOADS

of New York

American Toad

Fowler's Toad

Bullfrog

Swamp Cricket Frog

Spade foot

Tree Toad

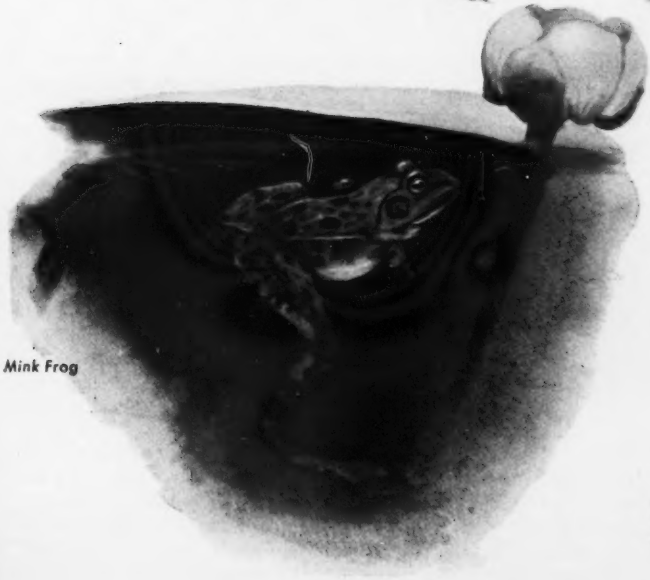
Green Frog

Peeper

Meadow or Leopard Frog

Pickerel Frog

Wood Frog



Mink Frog

Cricket Frog

Tree frogs

CRICKET FROG (*Acris gryllus*, from Greek *cricket*): Color variable, black, brown red, green or gray. This very long-legged frog reaches 1⅓ inches in length. It has alternating black and white bands on the rear of the thighs, an oblique white stripe from eye to shoulder, vertical dark and light bars on the jaw, usually a white-margined black triangle between the eyes, at least one dark oblique stripe on side. In meadows, creeks, ponds, in open areas along wooded edges; abundant in numerous habitats. They breed from March to October. The single eggs are brown and white. The dark olive tadpoles (1.5-1.8 inches long, black tipped) transform from April to October into frogs 0.4-0.6 inch. Range in southeastern New York not well defined.

SWAMP CRICKET FROG (*Pseudacris nigrita triseriata*, from *black* and *three black stripes* on back): Slender, brown, olive or grayish with five stripes, most prominent one from eye, over arm almost to groin. Three dark stripes on back usually continuous but sometimes broken, the mid-dorsal one usually forked behind. On ground, in ditches, swamps, temporary ponds, occasionally on low plants and bushes. Early breeder, from late March to mid-May. The eggs are in loosely irregular clusters of approximately one inch. The small tadpoles (less than an inch) transform in June and July into frogs 0.3 to 0.45 inch.

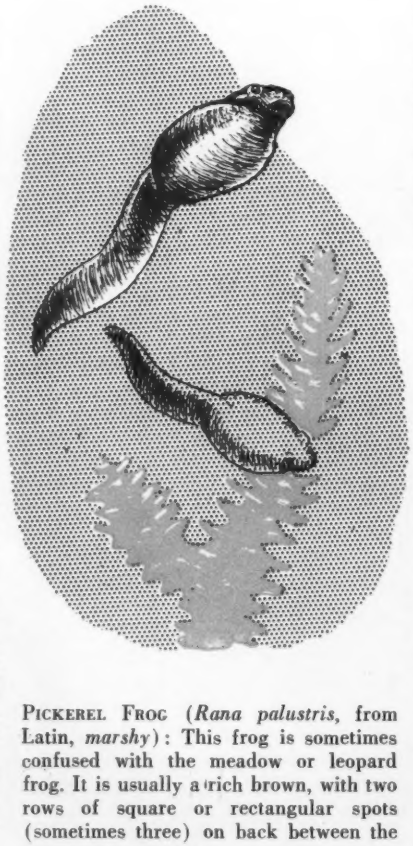
PEEPER (*Hyla crucifer*, from Latin *cross-bearer*): This fawn, buff, brown (yellowish to reddish) little frog is ¾ to 1¼ inches in length. Its conspicuous mark is an oblique cross on foreward half of the back. It, with the swamp cricket frog, makes up our Spring peeper chorus. They breed from April 1 to June 15, laying single eggs attached to stems of aquatic vegetation. The small tadpole, no more than 1⅓ inches, after 90 days transforms from July 1 to August 1 into ⅜- to 9/10-inch frogs. In the Fall we occasionally hear them calling in the bushes or even trees.

TREE TOAD (*Hyla versicolor*, from Latin *different* or *changeable* color): This, our largest tree frog, is 1¼ to 2 2/5 inches in body length. It may vary from almost white or ashy gray to green, deep browns to almost black. The rear of the thigh is orange with black net-like markings. After breeding season it is generally found on trees, mossy or lichen covered fences, and bushes. From last of April to August it lays little packets of brown and cream color eggs at the surface of the water. The tadpoles—2 inches long, scarlet or vermillion-tailed and with a long tip—transform from June 30 to August into frogs 0.5 to 0.8 inch.

Frogs

MINK FROG (*Rana septentrionalis*, from Latin *northern*): (Sometimes called the carpenter frog.) These variable colored frogs, 2 to almost 4 inches in length, may be olive green or brown. On back are several dark brown spots with tracery of light lines between them. The mink-like odor is very pronounced when frog is handled. It occurs in peaty or sphagnous lakes or ponds, or inlets or outlets of such lakes, particularly in water-lily areas. The eggs are laid in small block-like clusters 3 to 5 inches in diameter. The olive tadpoles 4 inches long probably, in most instances, over winter and transform from late June to August 30 into froglets 1-1/16 to 1½ inches long.

WOOD FROG (*Rana sylvatica*, from Latin, *relating to woods*): This beautiful light- or reddish-brown frog is one of our smallest frogs, seldom over 2½ inches in length. It breeds from mid-March to May 1, laying round egg masses 2½ to 4 inches in diameter. The deep olive tadpoles have very high crests and have tooth ridges (three above and four below) unlike our other frogs which have two and three. After June these tadpoles change to froglets ⅝ to ¾ inch.



PICKEREL FROG (*Rana palustris*, from Latin, *marshy*): This frog is sometimes confused with the meadow or leopard frog. It is usually a rich brown, with two rows of square or rectangular spots (sometimes three) on back between the dorsolateral folds. These occupy more than half of back. Below the fold is another regular row on the side. It has pronounced secretions which may be protective. These frogs occupy sphagnum bogs, marl ponds, cold streams and springs, ravines—an inhabitant of coldest waters. They breed from late April to mid-May, laying round egg clumps 3 to 4 inches in diameter. The eggs are prominent brown above and yellow below. The 3-inch tadpoles transform into froglets in August, ¾ to 1 inch in length.

MEADOW OR LEOPARD FROG (*Rana pipiens*, from Latin *piping* or *chirping*): Like the pickerel frog it has a light line on the upper jaw but has no orange on underparts, and the dorsal spots are not regular—with area between as large or larger than spots. Row of spots below dorsolateral fold more or less irregular. This 2 to 4 inch frog, green or brown, breeds in swampy marshlands, upland backwaters, overflows, ponds and creeks. In Summer they may be on swamplands, grassy woodlands, cultivated fields and similar locations. They breed from mid-March to June 1. The egg masses are block-like clusters, 3 to 6 inches. The tadpoles (3 to 4 inches long) transform in June to August into froglets 0.75 to 1.25 inches. (A thorough study of New York State meadowfrogs is needed, both in the field as well as in the laboratory.)

GREEN FROG (*Rana clamitans*, from Latin, *crying out*): This 2 to 4 inch frog, yellow-throated has a dorsolateral fold ½ to ⅔ the way to groin. This fold, as the name suggests, is the line between the back and sides. It is greenish brown with a bright green mark from ear or tympanum forward along the jaw. It is more solitary than any other species, living in smaller ponds and pools than does the bullfrog. Its bass viol note may be heard from end of May to mid-August when it lays a surface film of eggs usually less than a foot in diameter. The olive green tadpoles winter over and change to froglets ⅞ to 1½ inches from April to September.

BULLFROG (*Rana catesbeiana*, named after Mark Catesby): This smooth skinned frog (4 to 8 inches) has the upper jaw unicolor, dorsolateral folds absent, toes completely webbed. It is our largest and most aquatic frog, living in mill ponds, lakes, reservoirs, large rivers, and similar areas. In our State it breeds in June and July, laying eggs, in a large surface film, 1½ to 2½ feet in diameter. The large tadpoles 4 to 6½ inches long spend two winters as tadpoles this far north, changing into froglets 1½ to 2½ inches in length. This frog has been introduced into every state in the Union and preys on the native species.

Chautauqua County

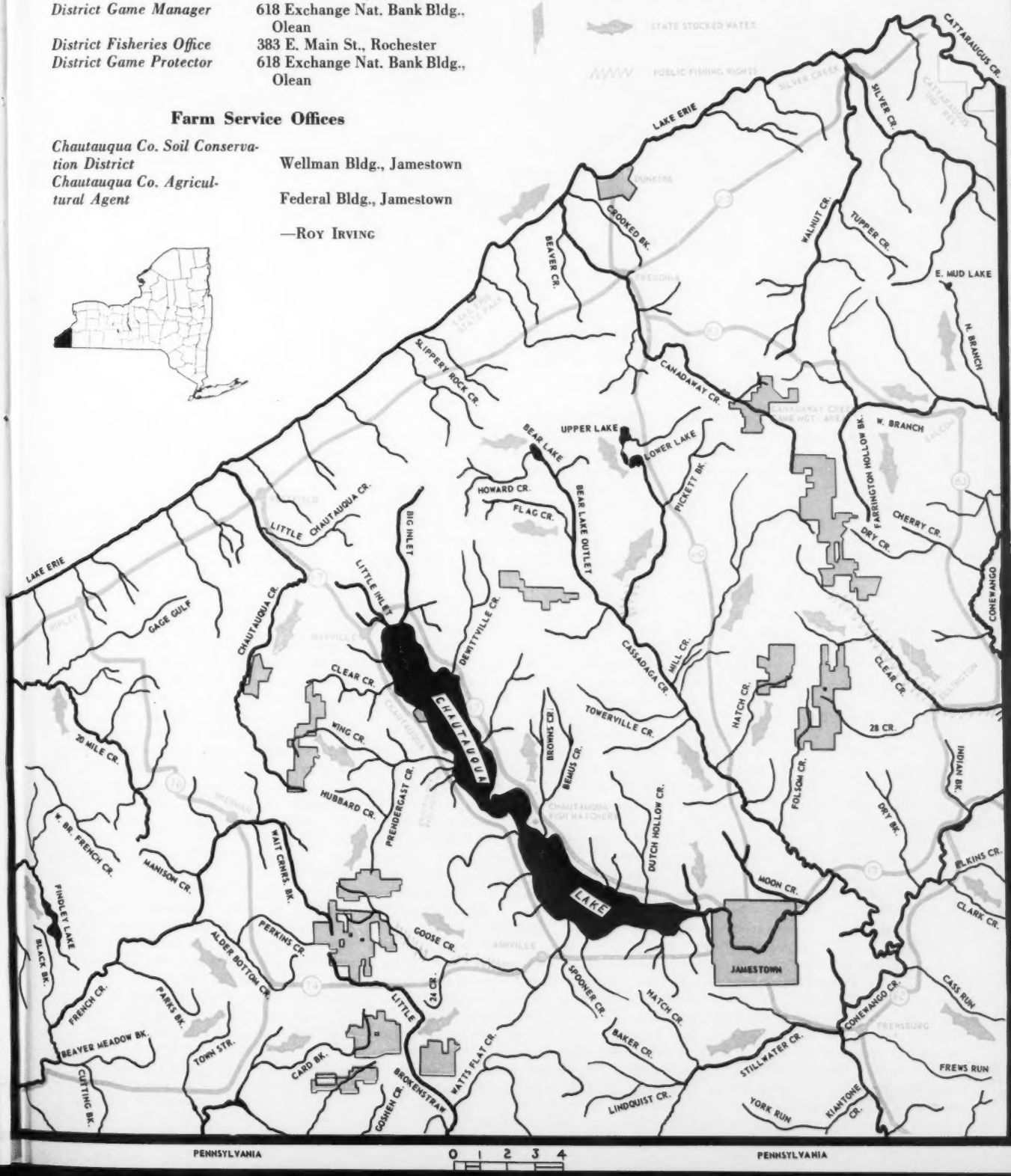
N.Y.S. Conservation Department Offices

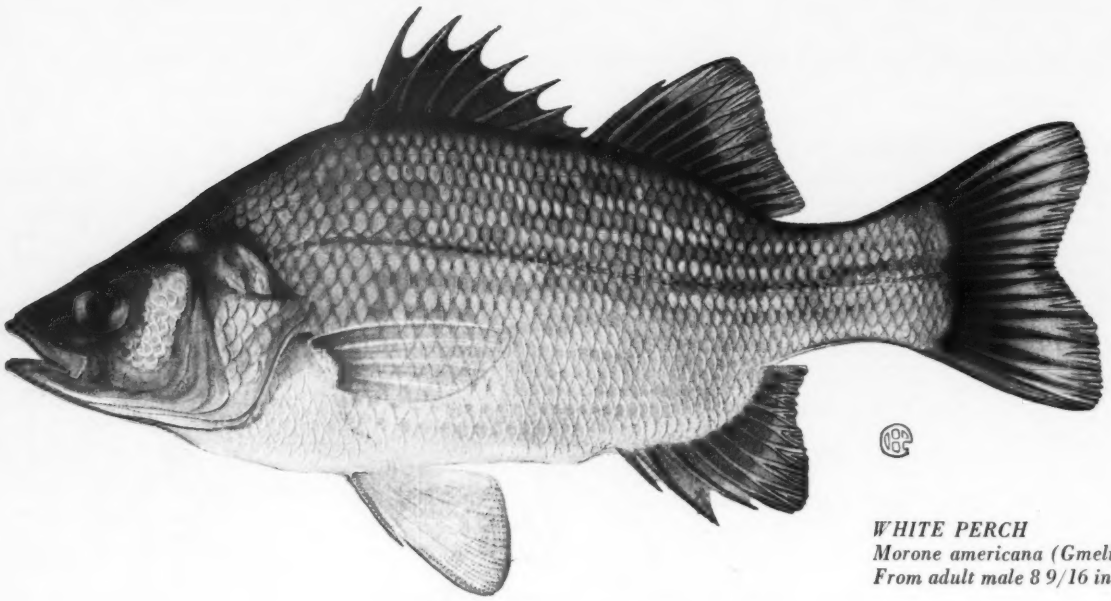
District Forester	335 East 3rd St., Jamestown
District Game Manager	618 Exchange Nat. Bank Bldg., Olean
District Fisheries Office	383 E. Main St., Rochester
District Game Protector	618 Exchange Nat. Bank Bldg., Olean

Farm Service Offices

Chautauqua Co. Soil Conservation District	Wellman Bldg., Jamestown
Chautauqua Co. Agricultural Agent	Federal Bldg., Jamestown

—Roy Irving





WHITE PERCH
Morone americana (Gmelin)
From adult male 8 9/16 inches long

WHITE PERCH

DOWN in the lower Hudson River and in Long Island areas, the white perch (a member of *Moronidae*, the river bass family) is one of the most abundant and popular pan fishes. It is often called a silver bass or silver perch. Widely distributed throughout the tidal-brackish waters of the Atlantic Coast from the Carolinas to Nova Scotia, this species is taken in abundance by tidewater anglers and it supports a moderate commercial fishery in the lower sections of many Atlantic streams.

New York State, with its hundreds of miles of tidewater shoreline and numerous Atlantic tributaries, offers an excellent environment for this fish and although consistently small in size, the species nevertheless provides considerable sport for Hudson River bank anglers.

Although native in brackish waters, the range of the white perch has gradually been extended to strictly fresh-water lakes and ponds. During the era when fisheries management depended mainly on the transport and stocking of fish, and when the concept of "more variety for better fishing" prevailed, conservationists of good intent but little knowledge fostered the distribution of white perch to inland waters in their attempts to provide better and more varied fishing. The New York State Biological Survey (1926 to 1939) reported white perch in only three of the 14 major watersheds of the State—Marine District, Lower Hudson and Mohawk-Hudson. But in recent years, investigators have reported the presence of this species in Cayuga Lake and some tributaries of Lake Ontario—the result of unauthorized stocking of what were thought to be white bass.

In New York lakes, spawning takes place in late April or May. The average adult female is capable of producing about 40,000 eggs which are scattered at random along gravel shoals or over submerged vegetation. Because of its successful adaptation to fresh-water environment and its prolific spawning capacity, the white perch of inland waters is easily capable of overproducing to the extent of being crowded for forage. In such cases the fish become stunted at a size too small to satisfy most fisherman, yet too large to provide food for any but the largest predators—so we have another "problem child."

Although the white perch is classified in the pan fish category, it has retained a great deal of the vitality of its seagoing cousin, the striped bass, and presents an interesting challenge to the patience and skill of the angler. A creature of varied feeding habits, this fish will (depending on whim and weather) take anything from a surface fly to a deep trolled spinner—including soft shelled crayfish, small minnows, worms, young eel, grasshoppers, "perch bugs" and a variety of small artificial lures.

The white perch is essentially a school fish, and usually when one is caught the fisherman may be reasonably sure that there are others around. Most successful catches are made while fishing shoal areas after dark and before dawn, when the fish move into shallow water to feed on insect larvae and nymphs. Trolling with worm and spinner in deeper water, 'though, may yield results at any time of the day. During the Spring Mayfly hatches, a wet or dry fly will quite often produce good results. And although the white perch is not an active Winter feeder, a few are occasionally taken while ice fishing.

Individual fish of the species have scaled over two pounds but the average runs about half a pound. Scale studies have shown the average age to be six years, although some individuals live to be 15 years old.

Once captured and prepared, the firm, succulent meat of the white perch will delight the palate of any gourmet. Because of its relatively large bones the cooked fish is easily eaten without the necessity of filleting. Moreover, when taken in the Fall or early Spring, the white perch yields a roe or milt which, when dipped in flour and egg and quickly browned in a frying pan, produces a tasty treat or even a meal, if enough are available.

NOW, there you have him, *Morone americana*, the white perch. He's not the biggest nor the gamiest but he's a worthy opponent at the end of a light rig. There's no size limit or season on him. The generous creel limit of 25 per day—Marine District and Hudson River—no limit—allows ample opportunity for a day's sport, and the more you catch today, the better the fishing will be in the future.

—FRANK A. TOMAN,
Analytical Chemist

WHITE BASS
Lepibema chrysops (Rafinesque)
From immature female 14 inches long

WHITE BASS

As every farmer knows, there are "bumper" crops of apples, berries or other produce in some years, but not in others. Many fish likewise fluctuate in numbers—a fact well illustrated by the recent abundance of white bass in Lake Erie. According to a press release issued by the Ohio Department of Natural Resources, June 15, "Stories of the tremendous number of white bass being taken by sport fishermen around South, Middle and North Bass islands are almost beyond comprehension of the fisherman who has never had the opportunity to fish for these fine fish. A school of white bass may number into the thousands and once a school is located, the catching is secondary. They will savagely strike almost any small artificial lure thrown in their midst and as long as the school stays within casting distance they can be taken easily."

This year should be a good one for white bass anglers along our own south shore of Lake Erie. In late Summer schools of them will cruise along the open beaches and off creek mouths. Catching these fish, which are this year reported to average 10 to 14 inches in Ohio waters, is great sport on a fly rod or light spinning tackle, and as a table fish they compare favorably with other fresh-water species.

Built like a white perch and marked liked a striped bass, the white bass is a very well-known and popular game fish in the South and Mid-west, where it reaches a weight of about three pounds. The average size, however, is much smaller, putting this fish in the class of a large "pan fish." Because of its restricted range in New York waters comparatively few anglers know it at all. The best chance to make its acquaintance is in Lake Erie or Oneida Lake, but its range extends along Lake Ontario and the St. Lawrence River, although it is more "spotty" in distribution toward the east. The New York angling catch of this species is not known with certainty, but is far less than that of Ohio where a recent study in Sandusky Bay showed that the white bass made up 17½ per cent of the entire angling catch (surpassed in rank only by yellow perch). Our Lake Erie commerical fishing accounts for about 18,000 pounds in good years, with a few hundred pounds being taken in the Lake Ontario nets.

A great many kinds of fishes, not closely related from the standpoint of classification, are called "bass." The white bass and black bass are about as far apart, taxonomically speaking, as are white and black in the color scale. They belong in entirely different families. The river basses (Family *Moronidae*) include the white bass, white perch, striped bass, yellow bass and several Eurasian species. The black bass actually belongs in the sunfish family (*Centrarchidae*) which is made up of many species, all North American.

In habits also, the white bass is nothing like a black bass. As already mentioned, these striped fellows wander widely and travel in schools. They like open water rather than hiding places. They spawn without any of the nest building or fry guarding behavior for which black bass are so noteworthy as responsible parents. White bass spawn in shallow water or in mouths of streams during the Spring months.

In Lake Erie, the principal food of white bass seems to be the emerald shiner which ranges throughout the lake. Mayflies are also taken. Small minnows are effective baits for white bass but artificial lures, including spinners and flies, are very successful. Fishing is mostly done during daylight hours but the species can also be caught at night.

In Ohio waters of Lake Erie, the tagging of white bass has shown that after spawning in shallow waters the fish move farther out into the lake often reaching Canadian waters. A number of studies of growth rate, carried on in various states by reading ages from scales, supports the conclusion that a maximum age of nine winters may be attained. However, the life expectancy averages somewhat less than this and in populations of rapid growth rate, maximum age is 4 years.

As an interesting exercise in identification of fish, look closely at the colored plates of white bass and white perch—especially if you are fishing Oneida Lake, for both species occur there. (There is no size limit or season on either, so you may not *need* to tell them apart.) In addition to the more conspicuous stripes on the white bass (or silver bass as it is called in Oneida Lake), this fish has the two dorsal fins separate, while the white perch has a single dorsal fin, deeply notched.

—JOHN R. GREELEY,
Chief Aquatic Biologist

The Forest and the Game

THIS past February I was contacted, as the Department's Game Manager for the Catskill District, to design a project that would improve environment for deer. The request was made by Nat Faegles, proprietor of the Hillside Inn, an enthusiastic sportsman and an accomplished guide. His desire, of course, was to improve the deer hunting on his property located near Narrowsburg in Sullivan County. He had heard Department representatives emphasize the importance of environmental improvement and was offering the land, the chain-saws and the labor (local sportsmen) to put Department preaching into local practice by staging a deer management field day.

The challenge was real, and one that any Game Manager would accept enthusiastically. However, the deer herd represents only one of the many valuable natural resources of the Catskill region, and since most of the others—especially forests—are closely related to deer and deer management, I felt these other resources should be considered in any long-range management plan. Consequently, contact was made with the District Forester of District No. 13. The problem and the objectives were explained, and as a result he sent a Forester to work cooperatively in designing a balanced forest management-game management plan. The forest management plan is explained in the article which follows.

The proposition put to us by Nat Faegles is fairly typical; a question often asked of Department field men is "What can we do to better conditions for wildlife in our area?" This question usually comes up as the finale to a discussion on the pros and cons of stocking game, for although stocking has its place as a game management practice, sportsmen generally recognize that its value is definitely limited. Consequently, groups want to know what *else* can be done. A good answer has been and still is: Improve the environment so that it is capable of supporting more game.

Improving the environment may be accomplished in several ways. Food and cover may be planted, or may result from cutting and releasing various stands of timber. Environment also may be improved by the proper harvest of a given species of game, for game out of balance with its environment may prevent the natural reproduction of game food and cover and thereby actually control it.

Such cutting, planting and harvesting are phases of game management. On the other hand, they are equally phases of forest management; a Forester may recommend planting, cutting of trees—and perhaps better harvest of the game crop as sound forest management. Thus, according to the specific area involved, game management and forest management are closely allied. The food and cover of concern to the Game Manager may well be the timber crop of concern to the Forester, and as a game crop affects forest reproduction it of course becomes of concern to both the Game Manager and the Forester.

Returning now to the specific problem —Nat Faegles' property—from a game management point of view this section of Sullivan County represents deer range that is definitely being controlled by the deer. Predominantly the area consists of second growth hardwoods, various species of oaks, soft maple, and beech. At the present time the forest growth has a relatively low timber value, so that little return could be expected from any cutting operation. Also, little if any forest reproduction is apparent, for the deer are eating sprouts of all species as soon as they appear.

The game management objective for such an area would be either to provide an adequate food supply for the deer, or to bring the deer herd into balance with its food supply—or both. Our plan calls for both. In the first instance, for a greater harvest of deer (which of course could not be accomplished in a one day project); and for the cutting of various timber species—in order to provide the tops of the trees as immediate food for deer, and also to create openings which, during the Spring and Summer, would encourage more sprout growth and thus increase the future food supply.

Preparation demanded that the Department's forestry and game representatives mark the trees to be cut. This took one day. Transportation, labor and food arrangements were handled by Mr. Faegles—which took some time on the 'phone and a trip to town. With these preparations completed, about 40 men came to participate in the project, and for some four to five hours chain-saws were buzzing and axes were flying. At the end of the day there was clear indication of what could be done in establishing a practical relationship between sound forest and game management, and also of what a few interested sportsmen can do to help themselves in a very short time.

This report would be inadequate unless certain associated factors were mentioned. First, the type of area covered represents a condition all too common throughout the southeastern part of Sullivan County. Much of this land is owned by hunting clubs that are interested mainly in deer hunting. The operation described here could well be applied on all these properties. However, until such time as a more adequate harvest is permitted the effects and values of any cuttings will of course be temporary; the deer are numerous enough to keep up with minor cutting operations, and in case large operations are attempted, they would soon catch up with them too. So we say again: Proper control of deer populations is a vital part of the overall management.

Second, Mr. Faegles intends to follow, during the years to come, the recommended cutting operations. He freely admits his "commercial" interest in providing the best in deer hunting; his appraisal of what is good or poor deer management may definitely affect his bread and butter. But regardless of motive, his *practices* will have a broad significance.

Third, many know that farmers in this area have suffered damage as deer trample or eat their crops, in spite of the fact that plenty of permits to kill offending animals have been issued and many deer have been killed. Would it not seem logical that as more food is supplied in the wooded areas, fewer deer would be out bothering the farmers' fields? Consequently, projects designed to make the woods more attractive to deer might relieve to some degree at least the farmers' problem.

—ALBERT G. HALL,
District Game Manager, Catskills

Dense pole stand in which work was done

Ideal deer food: Shoots coming up after cutting

AS noted above, the southern part of Sullivan County contains hundreds of acres of land covered by a young growth of trees in what is usually called a "pole" stage. The trees are mostly under 12 inches in diameter, and have small crowns. Competition is so keen that the growth rate on the individual trees is very small and the stand has become stagnated, and young seedlings and brush usually found on the forest floor have become almost non-existent.

These stands will produce commercial timber if left alone, but the timber may contain only a small percentage of trees that are highly prized by the lumberman. To find the food and the light to grow, each individual tree must make room for itself by crowding out its neighbors and slowly starving them to death—a process which often takes many years. Moreover, the successful tree in this battle for survival is often what we call a weed tree, one of little commercial value.

While this struggle continues, the crown canopy of the trees remains so tight, that little opportunity is given for seedlings to become established on the forest floor, and those that *do* become established, unable to grow properly, become a very poor quality stand. Only what are termed tolerant trees can seed in (and exist) under such conditions, and since very few of our more valuable trees are able to do this, Nature makes her own selection of the type of trees she will permit to grow and be available for the second crop of timber. It follows that there is little or no browse on the forest floor that is within reach of the deer herd.

Stories of the past tell us of the great stands of white pine that were found in this country, and of the rafts of this pine that were floated down the Delaware River to Philadelphia. Today we can find some tracts of such timber that contain some 20,000 or 30,000 board feet per acre, but they are few and far between. Instead, poor methods of logging and forest fires have almost eliminated the white pine, and we find a poor grade of hardwoods with a few scattered pine. Where the stand is not too tight, the white pine will sometimes form a slow growing understory, but where the stand is tight, the white pine seedlings usually die before they can get well established.

Marking trees to be cut

When the Forest Practice Act became law in 1946, technical aid became available to the landowners. The idea being to try to improve conditions both in cutting practices and in what is called silvicultural work on young stands. We had several calls to advise about release cutting of white pine. In these instances, the stand consisted mostly of an overstory of poor grade oak and other hardwoods, with slow growing white pine in the understory. Plans were made to remove most of the poor hardwoods, leaving only the most desired trees for the first timber crop, keeping sufficient shade to suppress the attacks of the white pine weevil, and yet permitting the white pine to grow faster.

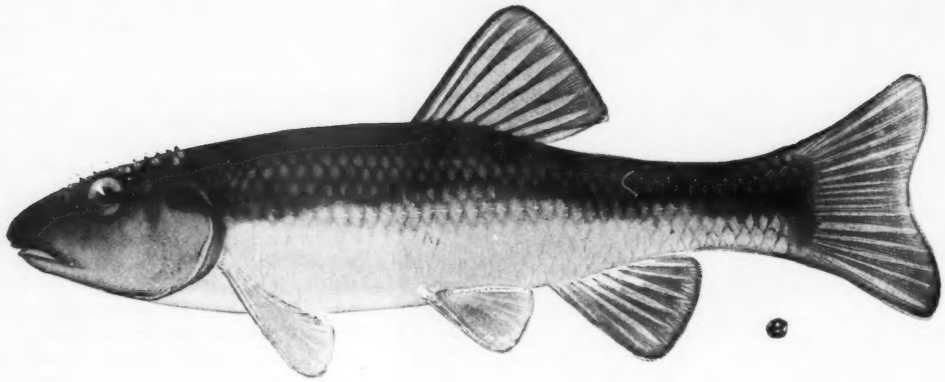
Quite often such a cutting operation is successful only if made several times, since the sprouts from the small hardwoods are so vigorous that they will grow faster than the remaining white pine. In this section of the country, the deer herd was so large that the sprouts were kept browsed back right to the stump, but where sufficient areas had been cut, deer were drawn from adjacent areas where the food was scarce.

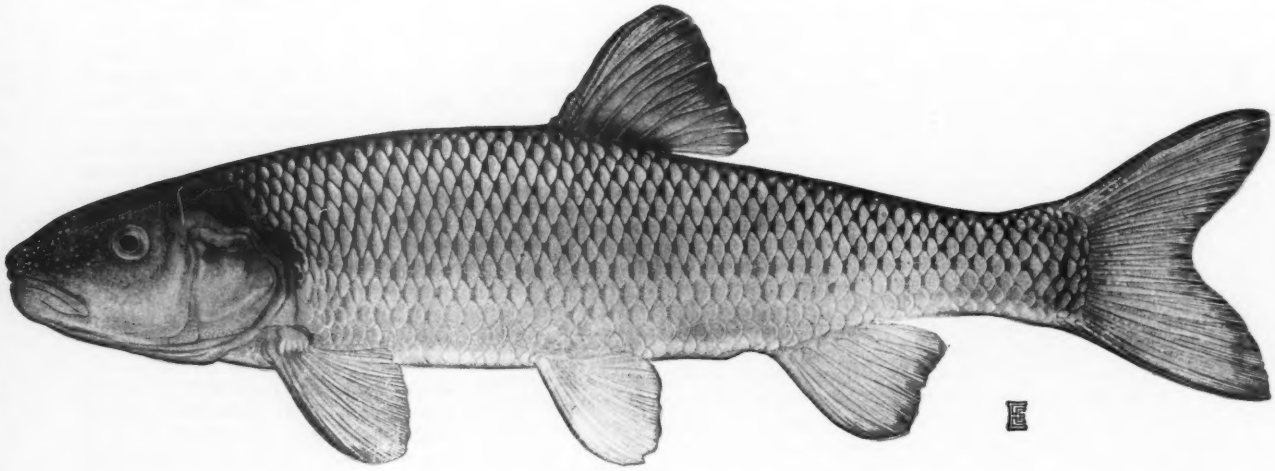
Further study has shown that the deer will browse practically all species of hardwoods that grow in this area. The sprouts grow sufficiently high during the first Summer to be above the ordinary Winter snows, and are available for good Winter feeding. The writer also feels that the trees remaining after such as that described above should be able to produce better crops of acorns or other seeds—from more vigorous trees with larger crowns.

The long range possibilities of such cuttings can produce the following results:

1. Increase greatly the rate of growth on desired trees; 2. release white pine or other seedlings that are growing as seedlings or as an understory; 3. permit the seeding in of a new crop of seedlings under the cover of the remaining trees; 4. permit the growing of white pine under stand conditions where only a small percentage is attacked by the white pine weevil; 5. help the selected trees develop a better crown and root system, which, in turn, would enable these same trees to produce better crops of seeds and nuts; 6. make food available to deer from both the tops of the trees and from the stump sprouts the following year.

—F. F. WEIGHT, *Forester*





CHUBS

A CONSIDERABLE number of fish species, both fresh-water and salt, are known as chubs. Our New York State fish which go by this name are all members of the minnow family (*Cyprinidae*). Perhaps the best way to distinguish them from shiners, dace or other minnows is by their shape. Chubs are chubby.

For better or for worse, chubs make their presence felt in our streams, ponds and lakes. They are prolific and produce large quantities of forage for game fish. They are hardy and much in demand as bait minnows. They are ready biters on worms, flies or other lures intended for better fish and are so abundant in many waters as to interfere seriously with game fish production by competing with trout, bass or other *desiderata* which need the food that the chubs are all too likely to eat before the game fish can get it.

Chubs, however, are able to make a go of it with very little. Although the Indians never counted them (and neither have we), there are probably more of them now than in early times; as our streams have become warmer (forcing out the trout), the ubiquitous, pestiferous, insectivorous chubs have taken over. Up to a point pollution does not seem to bother them, and since angling pressure is directed against the game fish, heavy removal of such predator species is good news for the season's crop of young chubs.

To a student of natural history, chubs are most interesting because of their highly developed nest-building habits. The males (much larger than the females) operate singly in building good-sized piles of pebbles. Each stone is separately picked up in the mouth and carefully dropped on the mound. Spawning with a harem of females goes on intermittently during the nest building. Hence, eggs are covered by stones and are relatively safe from other fish, and also are elevated above the bottom silt.

Breeding males are heavily armed with "horns" composed of conical tubercles on head and snout, which—like the antlers of deer—are shed after the breeding season. Males are very aggressive, particularly in driving away other males, but do not continue to guard the nest after spawning is completed and show no parental interest in the emerging fry. Perhaps that's just as well.

—JOHN R. GREELEY,
Chief Aquatic Biologist

Hornyhead

Two of the large chubs, fairly common in western New York, are known as hornyheads. These are Nocomis biguttatus, *the hornyhead or red-spotted chub, and* Nocomis micropogon, *the river chub. In general New York anglers will encounter these two species infrequently because of their more restricted range. However, both will bite a worm-baited hook. The hornyhead is usually under eight inches, but river chubs will average larger, sometimes up to ten inches. Like the fallfish, these chubs build stone pile nests.*

Fallfish

The fallfish is better known as silver chub or Mohawk chub. In southeastern New York and New England it is often known as windfish. It is eastern in range, being common throughout rivers and creeks of central and eastern areas of New York, but absent in extreme western parts. It was not native to the Adirondack upland, but unfortunately has been inadvertently introduced (via bait bucket) in a number of waters. In lakes and rivers fallfish often become large, up to about 18 inches. This is our largest native member of the minnow family, builds the biggest pebble mounds (several feet in diameter) and is a hard fighter. This is the fish of which Thoreau said, "The chub is a soft fish; it tastes like brown paper salted."

Horned dace

The horned dace is better known as creek chub—or just chub. The bright-colored males, with horns, build nests in streams, but the young frequently drop down into lakes or ponds. Beaver dams are a great place for chubs (as most Adirondack anglers know). In our waters males usually mature at four years, females at three, and an age of eight years is not uncommon. Even though an eight-inch chub is a big one, creek chubs are savage biters on any bait they can get in their big mouths.

the back of the book

Wildlife rabies control

The fox trapping program, operating from April to November, 1955, will function within the zone of high rabies incidence, rather than around the perimeter as in previous years. The Interdepartmental Committee, which determines the location of areas to be trapped, decided to try out temporarily a new trapping plan in 1955 which would apply all trapping effort in counties which are experiencing severe rabies outbreaks.

In previous years trapping was done in a "zone of scarcity" along the northern and western perimeter of the infected area. The plan for 1955 retains the "zone of scarcity" feature in that a continuous unbroken area will be trapped, the change this year is that the trapping zone has been moved toward the south and east so as to include many counties which have been experiencing severe rabies losses. It is hoped that this will alleviate the high livestock losses in these counties and permit a continued eastward shift of trapping zones in the future.

Fifteen professional trappers and three supervising trappers are presently operating in this new trapping zone which extends from Tioga County northward to Oneida Lake, and eastward from Oneida Lake to a point near Little Falls in Herkimer County. All counties now being trapped have reported rabies in 1955. Within this area, the disease has been most frequent in Broome, Cortland, Tioga and Tompkins counties—with Cayuga showing signs of being important as an infection source this Spring. It is therefore expected that trapper takes will be considerably lower in the five mentioned counties than elsewhere, since rabies undoubtedly kills off considerable numbers of the carrier.

From January 1 to April 30 (1955), fifteen counties reported 155 verified rabies cases—representing an increase over the same period in 1954 of about 67 per cent. The majority of animals diagnosed as positive were foxes, with cattle, dogs, cats and an assortment of others (raccoons, sheep, skunks) following in the above order.—JAMES W. KELLY, *Coordinator, Wildlife Rabies Control Program.*

Coast to coast

In our October-November issue of last year, we published an article entitled "All Hunters Aren't Hoodlums"—the gist of which was that this Department and other State agencies are fed up with the wanton destruction of State and municipal property (in the form of highway signs, trail markers, etc.) by irresponsible gunners who consider such items an appropriate target.

It seems they have the same problem in California, according to a note in the February issue of the *Forestry Digest*:

"Hunters apparently can't resist those target-like Tree Farm signs in California.

"An impartial survey—and perhaps an informal one—shows the average sign in the pine region is riddled with six bullet holes every year.

"The announcement comes from Ralph Hodges, forest engineer for Western Pine Assn., who has assumed, in addition to his more professional duties, the job of putting up new signs and replacing worn ones.

"Mr. Hodges determines annual damage to his signs by dividing the number of bullet holes he sees by the number of years the signs have been up."

Hog calling contest

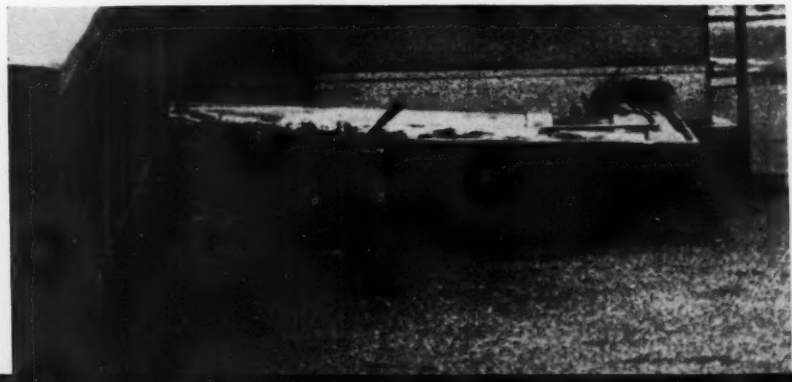
Our current spread on the subject of toads and frogs (we find too late) omits reference to an important conservation angle. The following is from a recent release by The Missouri Conservation Commission:

"GRANDIN—C. J. Baggett, a farmer near here, has troubles, and his pond's only bullfrog is the cause of it all.

"Baggett complains that some young pigs he bought to fatten have been unable to put on any weight. 'That blamed bullfrog in the pond gives out with a bellow and the pigs think it's someone calling them to eat. They're running all the fat off their bones answering his call,' Baggett declared."

Woodcock on a hot tin roof

Photographed from a window in the Department's Albany office



Park attendance records

Attendance records fell by the dozens in the State park system over the July 4th week-end. In the first four days of July over 1½ million persons entered New York's 81 State parks. This is equivalent to one out of every nine persons in the State's population.

More than half of this number (793,115 people to be exact) patronized the park system on July 3rd alone. Jones Beach had a record 200,000 people, with countless thousands turned away, and nearly half of the State's parks, a minimum of 35 where adequate records are available, hung up a new attendance record for one day.

The story was the same everywhere. The Taconic region tripled its attendance over the corresponding week-end of 1954. In at least 15 park areas, it was necessary to close gates before 1 p. m. because of limits on parking space; at Captree State Park and Lake Taghkanic for example, before 11 a. m. The new Anthony Wayne area in Harriman State Park, open for its first Summer week-end, established a record by using its 1,500 lockers more than three times in one day. The pool at Letchworth State Park exceeded even this record, its 327 lockers being used 1,219 times on July 3rd.

Smaller up-State parks shared in the surge. Fair Haven Beach with 42,300 for the week-end and Westcott Beach with 15,000 were only two of twenty up-State areas establishing new records. Niagara Reservation could not begin to accommodate the influx. Verona Beach, an area new since the war, parked a record 2,800 cars on July 3rd.

In Memoriam—a lean-to

By way of inaugurating the 1955 Summer camping season in the Adirondacks, Director of Lands and Forests William M. Foss, District Forester William E. Petty, and Rangers John Hickey and Ernest LaPine of Keene and Keene Valley, respectively—with scores of friends of the late Walter Biesemeyer of Keene—dedicated on May 30 a valuable addition to the camping facilities of the High Peak area. On the shore of Lost Pond, at 3,000 feet elevation and on the northern slopes of Hurricane Mountain, this new facility was commemorated to the memory of Mr. Biesemeyer, one of New York State's most enthusiastic conservationists.

Perhaps because he was born a Swiss and became a trained architect amid the beauties of the Alps he was the more able, when arriving in the Adirondack area for th efirst time, to feel more than most of us that this was perhaps the finest handiwork of the Greatest Architect. Mr. Biesemeyer's hospitality at his resort in Kenne, The Mountain House, together with his family's warmth of natural love for the out-of-doors, made enthusiasts of many visitors to the High Peak area.

The lean-to was constructed under the very skillful and able direction of Ranger Ernest LaPine. Funds were raised from scores of friends and organizations, and it was indeed a very happy moment for Mr. Biesemeyer's friends and family when the State of New York, through Mr. Foss, accepted the lean-to on behalf of the People of the State of New York for public use.

The Adirondack Mountain Club's plaque expresses the spirit in which this lean-to was constructed:

Dedicated to Our Beloved Friend
Waltr Biesemeyer
(1907-1953)

The peace of heart and mind he found in this wilderness will be forever shared by those who lift up their eyes into the hills.

—WAYNE H. BYRNE, *Plattsburgh*

A mighty salmon

The largest salmon taken by an angler in New York waters, judging by available records, was a 10-pound, 13-ounce fish, 31 inches long with 17-inch girth. It was landed June 16 by Dr. Fred W. Posson of Glens Falls on spinning tackle in Lake George.

Scales were sent to the Conservation Department for age determination. They showed six Winter marks.

A few salmon heavier than this have been netted in the annual Fall spawn-taking in Lake George. There is reason to expect that this record may be broken, for this salmon was still growing rapidly when caught. If you have record of a bigger salmon please send it in, preferably with some scales to determine age and growth history.

Hunting and fishing

This note on the comparison of national interest in outdoor sports was printed recently in Jim Keefe's news release for the Missouri Conservation Commission, according to the Wildlife Management Institute.

"Baseball the national pastime? Don't you believe it. America's leading sport is hunting and fishing, according to sportcaster Bill Stern. Stern said baseball drew 18 million paid customers in 1953, rodeos had 20 million, and horse racing pulled in 30 million. Hunting and fishing outdrew them all with 32 million hunters and fishermen buying licenses that year. And there were another four million salt-water fishermen not required to have licenses.

"Baseball equipment manufacturers sold 35 million dollars worth of goods and golfers spent $80 million on their sport. Hunters and fishermen made that look like small-time deals by spending six billion dollars, Stern said."

It might be added that approximately three million persons were given free hunting and fishing privileges by the various states and that the total would be swelled still further by the uncounted millions of youngsters and women who are not required to have licenses for these activities in many of the states.

What's in a name?

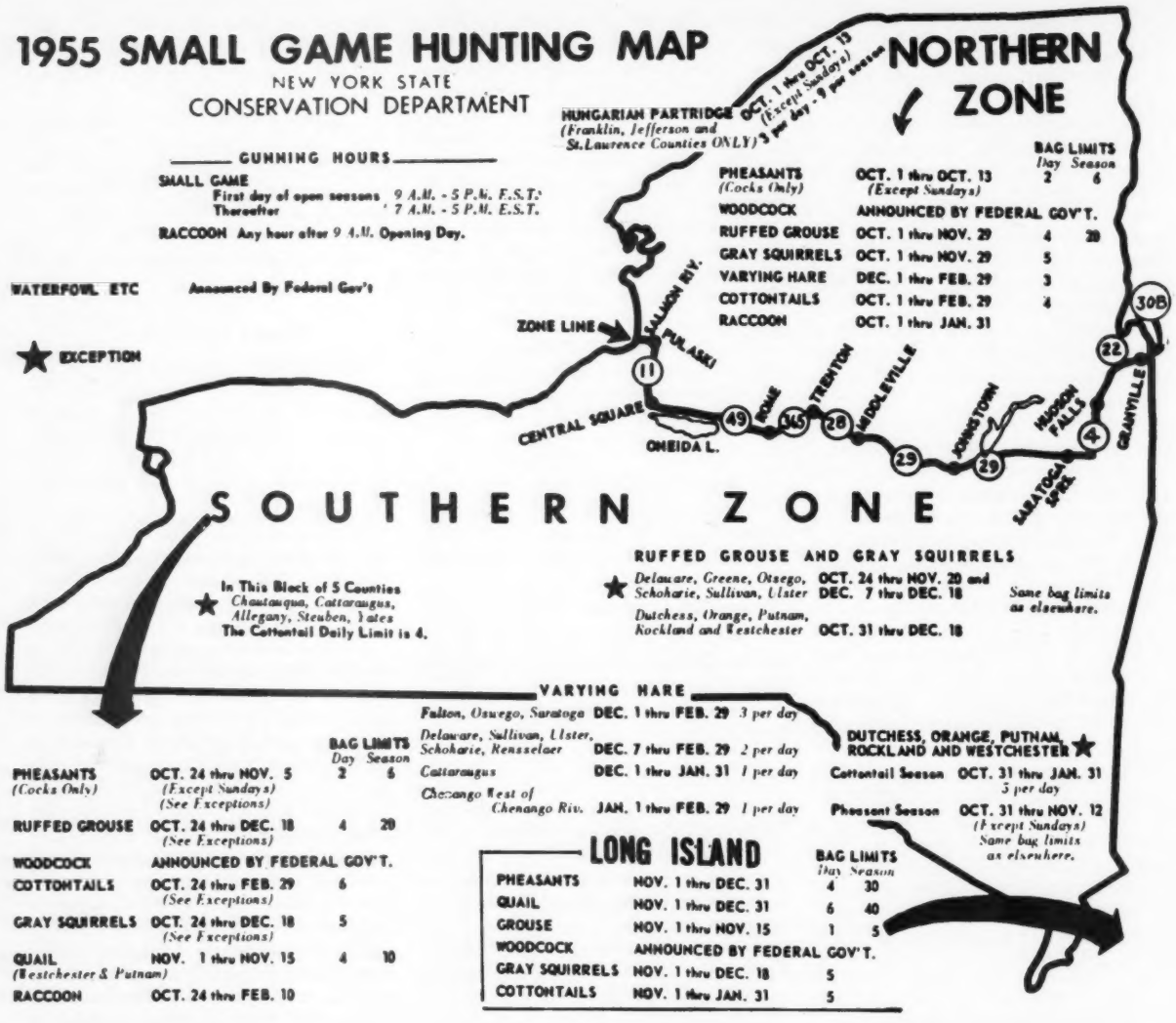
The following item appeared recently in the Richmond (Virginia) *Times-Dispatch*, and was brought to our attention by Henry P. Davis of the Remington Arms Company. We thought you might be interested—if you haven't gotten hold of it already:

"A flock of ships is called a fleet; a fleet of sheep is called a flock; a flock of girls is called a bevy; a bevy of wolves is called a pack; a pack of thieves is called a gang; a gang of angels is called a host; a host of porpoise is called a shoal; a shoal of fish is called a school; a school of buffalo is called a herd; a herd of seals is called a pod; a pod of whales is called a game; a game of lions is called a pride; a pride of children is called a troop; a troop of partridges is called a covey; a covey of beauties is called a galaxy; a galaxy of ruffians is called a horde; a horde of rubbish is called a heap; a heap of oxen is called a drove; a drove of blackguards is called a mob; a mob of worshipers is called a congregation; a congregation of theater-goers is called an audience; an audience of peacocks is called a muster; a muster of doves is called a flight; a flight of larks is called an exaltation and if they are starlings, it's murmuration; a murmuration of bees is called a swarm; a swarm of foxes is called a skulk; a skulk of pigs is called a stye; a stye of dogs is called a kennel; a kennel of cats is often called a nuisance."

Patent on worms

Mind telling us what brand of fishworm you're using? A ludicrous question? Not at all, reports the U. S. Fish and Wildlife Service. A man from Louisiana prized the fishworms he raised so highly that he got the government to give them a registered trademark!

The man contacted the U. S. Patent Office; said his worms were something special; needed a special name; wanted to register them as "Louisiana Pinks;" restrain other worm raisers from using that name. U. S. F. & W. S. and the P. O. huddled. The P. O. accepted the application.


1955 SMALL GAME HUNTING MAP
NEW YORK STATE
CONSERVATION DEPARTMENT
GUNNING HOURS
SMALL GAME
First day of open seasons 9 A.M. - 5 P.M. E.S.T.
Thereafter 7 A.M. - 5 P.M. E.S.T.
RACCOON Any hour after 9 A.M. Opening Day.
WATERFOWL ETC Announced By Federal Gov't
EXCEPTION
NORTHERN ZONE
HUNGARIAN PARTRIDGE OCT. 1 thru OCT. 13 (Except Sundays) 3 per day - 9 per season (Franklin, Jefferson and St. Lawrence Counties ONLY)
BAG LIMITS Day Season
PHEASANTS (Cocks Only) OCT. 1 thru OCT. 13 (Except Sundays) 2 6
WOODCOCK ANNOUNCED BY FEDERAL GOV'T.
RUFFED GROUSE OCT. 1 thru NOV. 29 4 20
GRAY SQUIRRELS OCT. 1 thru NOV. 29 5
VARYING HARE DEC. 1 thru FEB. 29 3
COTTONTAILS OCT. 1 thru FEB. 29 4
RACCOON OCT. 1 thru JAN. 31
ZONE LINE
SALMON RIV.
FULTON
CENTRAL SQUARE
ONEIDA L.
ROME
TRENTON
MIDDLEVILLE
JOHNSTOWN
HUDSON FALLS
GRANVILLE
SARATOGA SPGS.
SOUTHERN ZONE
RUFFED GROUSE AND GRAY SQUIRRELS
Delaware, Greene, Otsego, Schoharie, Sullivan, Ulster OCT. 24 thru NOV. 20 and DEC. 7 thru DEC. 18
Dutchess, Orange, Putnam, Rockland and Westchester OCT. 31 thru DEC. 18
Same bag limits as elsewhere.
In This Block of 5 Counties Chautauqua, Cattaraugus, Allegany, Steuben, Yates The Cottontail Daily Limit is 4.
VARYING HARE
Fulton, Oswego, Saratoga DEC. 1 thru FEB. 29 3 per day
Delaware, Sullivan, Ulster, Schoharie, Rensselaer DEC. 7 thru FEB. 29 2 per day
Cattaraugus DEC. 1 thru JAN. 31 1 per day
Chenango West of Chenango Riv. JAN. 1 thru FEB. 29 1 per day
BAG LIMITS Day Season
PHEASANTS (Cocks Only) OCT. 24 thru NOV. 5 (Except Sundays) (See Exceptions) 2 6
RUFFED GROUSE OCT. 24 thru DEC. 18 (See Exceptions) 4 20
WOODCOCK ANNOUNCED BY FEDERAL GOV'T.
COTTONTAILS OCT. 24 thru FEB. 29 (See Exceptions) 6
GRAY SQUIRRELS OCT. 24 thru DEC. 18 (See Exceptions) 5
QUAIL (Westchester & Putnam) NOV. 1 thru NOV. 15 4 10
RACCOON OCT. 24 thru FEB. 10
DUTCHESS, ORANGE, PUTNAM, ROCKLAND AND WESTCHESTER
Cottontail Season OCT. 31 thru JAN. 31 5 per day
Pheasant Season OCT. 31 thru NOV. 12 (Except Sundays) Same bag limits as elsewhere.
LONG ISLAND
BAG LIMITS Day Season
PHEASANTS NOV. 1 thru DEC. 31 4 30
QUAIL NOV. 1 thru DEC. 31 6 40
GROUSE NOV. 1 thru NOV. 15 1 5
WOODCOCK ANNOUNCED BY FEDERAL GOV'T.
GRAY SQUIRRELS NOV. 1 thru DEC. 18 5
COTTONTAILS NOV. 1 thru JAN. 31 5

Small Game seasons for 1955

On June 14th, representatives of the Department's Bureau of Game met with the Conservation Council's Small Game Committee to discuss small game seasons for 1955. Recommendations resulting from this meeting were drawn up and submitted to Commissioner Wehle for his approval. Department orders giving season dates, bag limits and other regulations were signed July 12th. The seasons are summarized graphically on the accompanying map.

Seasons for migratory game species controlled by Federal regulations were omitted, as they had not been received at the time of this writing.

Most important feature of the 1955 regulations is that open seasons for cottontail rabbits, pheasants, grouse and squirrels open on the same date in their respective zones. In the Northern Zone these seasons open October 1st. In the Southern Zone the seasons open October 24th, with the exception of the Lower Hudson counties (Dutchess, Orange, Putnam, Rockland, and Westchester counties) where October 31st is the opening date. On Long Island it's November 1.

The zone line this year is the same as that used last year. This line is easy to identify, applies to all species, and meets primary biological requirements. The continued use of this line eases the problems of law enforcement and simplifies description of seasons.

Waterfowl hunting regulations

On May 16, official representatives from every Atlantic coastal state from Maine to Florida (Pennsylvania excepted) convened as members of the Atlantic Waterfowl Council, at Raleigh, N. C. to discuss with U. S. Fish and Wildlife Service men basic waterfowl regulations for 1955-56.

The Council, acting in an advisory capacity to the Fish and Wildlife Service, has been most effective in co-ordinating waterfowl research and management among its member states along the Atlantic flyway and in clarifying sportsmen's opinions as a guide to the Federal Service, whose responsibility it is to annually set seasons, bag limits and other waterfowl hunting regulations.

Dr. Joseph Linduska, from the Bureau of Game Management of the Fish and Wildlife Service, outlined the Federal government's proposals on basic regulations to apply this year along the Atlantic flyway. The Council then discussed and acted on each proposal. The results (listing, in order, the regulation, F. & W. S. proposal, and Atlantic Flyway Council action):

1. *Shooting hours:* To remain same as last year (½ hr. before sunrise to sunset); unanimously approved.

2. *Baiting:* Prohibition to remain in effect; approved 14-2.

3. *Species harvest:* Supports principle and application on flyway basis when variation in productivity warrants; unanimously approved.

4. *Split seasons:* To be offered—with segments of unequal length as alternative to zoning; unanimously approved on the basis that no penalty shall be exacted of states electing to split season into unequal periods. (Under this proposal, the Council disapproved by 8-7 a motion to extend the length of season, without penalty, in lieu of zoning.)

5. *Season dates:* Within the period Oct. 1 to Jan. 10, with provision for further extension provided that total number of shooting days (length of season) be reduced by 2 days for each day of shooting after Jan. 10; Council approved by vote 13-2 a motion for season framework from Oct. 1 to *Jan. 20* without penalty.

6. *Motorboats:* No change in present regulations re use of motorboats; Council moved unanimously that Service permit persons shooting over or tending a rig of decoys to shoot and recover cripples by use of boats under power, within a radius of 200 yards of the shooting position or blind where waterfowl was originally crippled.

7. *Transportation:* As is—with head, head plumage and feet attached; approved regulation as is, unanimously.

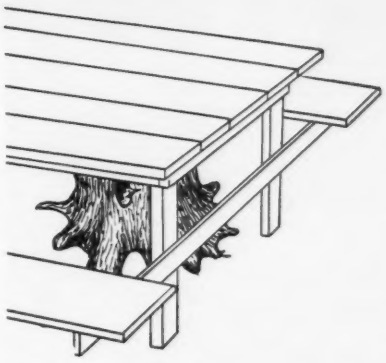
8. *Shipment of migratory game birds;* interstate shipment of one possession limit per week; approved present regulations unanimously.

Following the above specific recommendations, the Atlantic Council approved 12-3 a resolution asking the Service to recognize the primary desire of the Council—for a longer season than was provided in 1954-55. The Council suggested 75 to 80 days (60 last year) if biological facts warrant and the Service considers justifiable any means of liberalizing the waterfowl harvest.

The Council also approved 13-2 a resolution calling for zoning the flyway should the Service find the request for a 75-80 day season unacceptable. It was further unanimously resolved that the American and red-breasted mergansers be dropped from the regular bag limit and considered outside the normal bag limit of ducks.

Nest of a Northern Flicker

SPEAKING of the nests of the Northern Flicker (*Colaptes auratus luteus* Bangs) Coues (1872, "Key to North American Birds," 6th Ed.) wrote: "The bird excavates sound wood for a nest less frequently than the other genera; it generally takes advantage of natural holes in decayed trees, stumps, posts, etc., and sometimes selects very odd nooks—it is



known to have burrowed in a haystack, and has nested within buildings." Dawson (1903, "The Birds of Ohio") said: "Nest, an excavation in a tree or stump usually made by the bird at a moderate height." Barrows (1912, "Michigan Bird Life") indicated that they nest commonly in a decayed tree, "excavating a hole from one to three feet deep and usually at no great height from the ground, most often from ten to thirty feet."

Since the foregoing quotations agree rather definitely on the usual location of the Northern Flicker's nest, it seems worthwhile to record the following ground level location of a nest:

At 6:30 on a pleasant evening in June, we arrived at a popular beach near Buffalo to have a picnic supper. The area was well supplied with several dozen heavy plank picnic tables with attached benches, and numbers of picnickers were scattered in groups throughout the wooded area. We chose a vacant table, spread our supper on it, and sat down to enjoy the cool shade and the food.

As we ate and watched the surrounding human activities, we were conscious of numerous calls of the yellow-shafted flickers in the trees and in the area immediately around us. The birds seemed quite undisturbed by the noise and activity of the adults and children eating and playing nearby. Calls of the adult flickers were interspersed by those of young ones whose voices seemed to come from about the level of the tables, and quite close by.

A few feet away, under the vacant table next to ours, there was an ash stump about 12 inches in diameter and 2 feet high. Several years before the tree had been cut off; it had been damaged near the ground, leaving a barkless scar about the size of a human hand, and the exposed wood was gradually decaying. At a point in the stump 8 inches above the ground the yellow-shafted flickers had started to excavate a cavity in the dead wood surrounding the old injury. Continuing their excavation they had hewn out a nest hole that extended down in the stump to a depth slightly below the ground level. This had occurred in the Spring (while the park was closed) and the female had deposited her eggs and had started to incubate them before the tables were arranged in preparation for the opening of the park. The picnic table next to the one which we occupied had been set down directly over the stump, completely covering and partly hiding it.

Twice during our observations the parents fed the young ones, but judging from the frequency and the insistency of the calls of the young, the visits of the parents were much too infrequent, so occasionally a young one thrust its head out of the nest hole and called repeatedly and lustily. — DR. ALBERT R. SHADLE, *Biology Dept., Buffalo University*

Osprey and bullheads

John E. Wilson, District Game Manager of the Ontario-St. Lawrence District, tells us that a pair of large hawk-like birds feeding on the Perch Lake Game Management Area impoundment proved to be a pair of osprey.

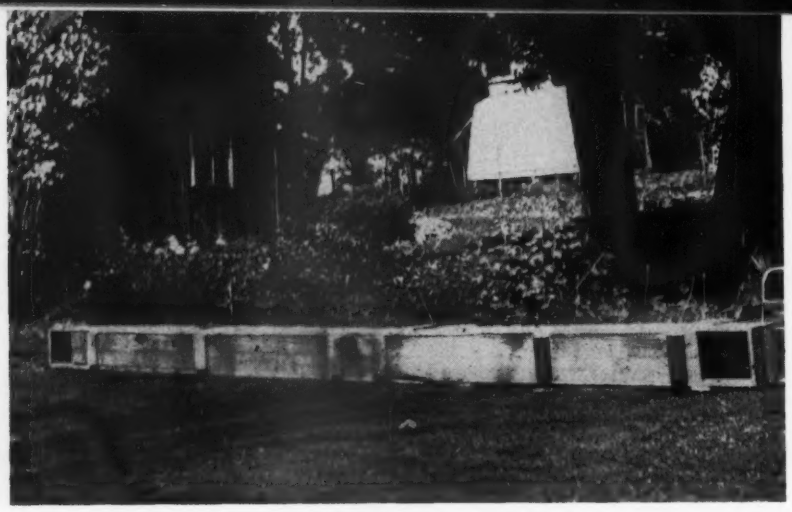
These infrequent visitors to the Area put on a spectacular show. The pair, hovering over the marsh at several hundred feet, would suddenly plummet into the water sending the spray flying. During a fifteen-minute period each bird was successful in flying to a roosting location with a bullhead in its talons. The water depth in this location is 12 to 18 feet and a large number of bullheads concentrate annually in this area to spawn.

Baldwinsville Trials

During April the Three Rivers Game Management Area, near Baldwinsville, was host to two field trial groups. The Orange County Field Trial Club ran for three days (April 22, 23 and 24) with an excellent entry of dogs from throughout the Northeast. The Brittany Field Trial Club of Syracuse, sponsored the Regional Brittany Trial on April 23 and 24, and had such a substantial entry of dogs that they were hardly able to complete the run in the two days allotted to them. The two groups operated on separate one-course areas and the weather was perfect throughout the running.

This was the first time we have run two trials on the area during the same week-end, and it worked out quite favorably for everyone concerned.

During the course of the trials we were surprised to find that a third "unscheduled trial" also involved the Baldwinsville Area. A group of sport car enthusiasts had selected the road net work at Three Rivers for a part of their point-to-point time trials and for a while the roads were alive with midget cars.—EARL A. WESTERVELT, *P. R. Coordinator.*



Beaver dam sluice, bottom view

Beaver control

As the beaver population has increased during the past several years, the problem of keeping abreast of the damage caused by these enterprising animals has become more and more difficult. So the men responsible for the control of beaver damage have to be on the alert for new ways and means of outsmarting Nature's foremost engineers.

Most landowners are willing to deed over a couple of swampy acres to Mr. Beaver, hoping there will be a pond constructed which would attract ducks and muskrats or in some cases furnish water for stock and maybe for fire protection. However, Mr. Beaver (who incidentally doesn't always go along with man's idea of land use) may take a mile if you give him an inch. And when he starts flooding crop and timber land or plugging highway sluices, he becomes a nuisance. The problem is then referred to the Conservation Department.

The solutions of such problems to date have been reduced to four alternatives: (1), To issue permits for the landowner to destroy the beaver; (2), to live trap and transfer the animals to other locations; (3), to try to find some means of discouraging the beaver from rebuilding dams that have been torn out; and (4), to devise some structure that will stabilize the water level in the pond despite the continued activity of the beaver at the dam.

The first alternative is the least desirable and should be avoided whenever possible. The second creates a problem as to where to release the beaver so they will not become troublesome again.

The third has brought to light many methods designed to discourage their activities, among them these: A can filled with heavy oil, having a small hole in the bottom and hung on a pole, will cause a constant oil slick on the water near the dam and sometimes discourages the beaver; an electric fence has been strung across a hole torn in the dam, but all it accomplished was to give some beaver a real thrill until one of them placed a stick across the wire—shorting out the fence; lanterns have been hung on the dams, but apparently only furnished light for the beaver so that he could do a better job at night.

These and many other methods have been tried. Occasionally one will work on a given site, but as a whole they have not been satisfactory.

The fourth method, involving stabilization of the water level, offers more hope, and there is one structure that has been successful in the Catskill District under certain conditions. The important requirement is that the water, to a distance of about 15-20 feet from the dam, remain four feet or more in depth *after* the water has been lowered to the desired level by reducing the dam. This structure—called a sluice for want of a better name—consists of a wooden box 12 to 18 inches square and at least 20 feet long, made of one-inch rough lumber and enclosed on all sides and at both ends. The only openings are in the bottom at each end. (It is an advantage to cover all corners with sheet metal to discourage chewing by the beaver.) A wire or two should be placed over the intake so the beaver won't crawl in the opening and drown—thereby plugging the sluice. (That has happened.)

The sluice should be placed in a notch cut in the dam (or attached to end of a highway culvert) so that the bottom is at the desired water level. It is held in place and at the proper level by driving two stakes in the pond bottom and nailing the sluice, about in the middle, to these. The end of the sluice in the pond should be about 15 to 18 feet from the dam. Of course the dimensions vary for each structure, and depend upon the situation and the volume of water that must be handled.

With this sluice we haven't actually outsmarted the beaver, for he indicates that he knows the answer, but here's how it can and has worked: The distance from intake to dam, and the depth of water at the intake of the sluice, has the Beaver in over his head, so to speak; he's accustomed to working on or near the surface. Furthermore, Nature's engineering course has not as yet taken into consideration the fact that water may flow up-hill—which this sluice appears to make it do.

In the Catskill District there have been two of these sluices working very well for some time, one in a dam and one attached to a highway culvert. A third placed in a dam failed because the landowner did not replace the structure after the spring ice pulled loose the stakes holding the box.

In any case, we feel we can recommend this sluice to landowners who suffer flooding, as a reasonable or at least possible solution to their problems.—FRANCIS W. SHERWOOD, *Conservation Aide.*

Sluice box installed in beaver dam

Protect your investment

The Sonora-Bradford Birdseye Hollow area of State land (in Steuben County) was reforested this Spring. Over 500,000 trees were planted. In order that landowners adjacent to the area might realize "that this program represents quite a considerable investment by the State not only in the planting but also in the producing of the trees at the nurseries," our District 4 Forestry Office at Bath sent out a letter conveying the above facts—and further noting:

"We use the term 'investment' advisedly since if the trees which have been planted survive, the money which has been spent will be returned to the State—(in other words, taxpayers) in the form of sales of Christmas trees, fence posts, pulp and eventually, timber.

"In order to survive, these trees must be protected from fire, insects, and grazing. Since you are in the neighborhood and in a good position to help, we are asking your co-operation in the preventing of fires, the reporting of fires if they do occur, the reporting of any serious outbreak of disease or insects on the trees, and the prevention of livestock grazing on this land.

"The money which has been spent to produce, plant and protect these trees was furnished by you—the taxpayers. We are sure you want to help protect your investment. Your assistance in this matter will be greatly appreciated."

Personal contact with each ownership adjoining the area was also made by Forest Rangers.

Fish Salvage for 1955

Along about the end of March four of the five Fish Salvage crews of the Bureau of Fish started operations on Long Island and in Westchester, Putnam, Sullivan and Orange counties. The fifth crew started work in Rensselaer county about April 1. Both public and privately-owned waters get netted, as well as city reservoirs. In the first two categories the work is a population control project, but in reservoirs, where no angling is allowed, it is more a question of harvesting an annual crop. Many of the pan fish, such as perch, sunfish, calico bass and bullheads, taken in this section of the State are used for stocking ponds for kids' fishing derbies, or ponds where kids have a monopoly on the fishing.

As the season progresses, the crews move northward to carry on similar operations in the central and northern sections of the State. Approximately 60 waters are netted annually, with production averaging 225,000 pounds of catchable sized fish restocked.

Winter deer kill, 1954-55

An average of 6.8 deer per square mile died from starvation in Adirondack "deer yards" during the Winter of 1954-55—a remarkably low mortality considering the heavy snows and extremely low temperatures which prevailed last Winter throughout most of the Adirondack deer range.

The count of dead deer was made this Spring by Department research men and Game Managers. Forty-five known deer concentration areas were surveyed and 228 dead deer were found on 24 of these areas. This averaged 12.23 dead deer per square mile—but examination of the carcasses revealed that 101 of this total succumbed from gunshot wounds, predation and causes other than starvation.

Heaviest starvation losses last Winter were registered in Franklin, St. Lawrence and Lewis counties where 18 of the 22 areas checked contained dead deer. Hamilton, Herkimer and Warren counties, where starvation losses have been high in severe Winters of the past, fared very well this past Winter; only six of the 23 areas checked revealed dead deer.

STARVATION LOSS

Winter	Dead Deer Per Square Mile
1939-40	21.3
1940-41	10.0
1941-42	7.3
1942-43	3.2
1943-44	22.2
1944-45	8.5
1945-46	3.0
1946-47	5.2
1947-48	21.3
1948-49	0
1949-50	0
1950-51	0
1951-52	6.8
1952-53	0
1953-54	0
1954-55	6.8

The stage was set early last Winter for really severe losses from starvation. All the elements which, in past years, have resulted in starvation losses as high as 21 deer per square mile were present—high population density of deer, limited available browse in wintering areas, deep snow cover and sub-normal temperatures. That heavy mortality didn't occur is attributed to a fortunate break in the weather in late February: Warm rains that reduced and compacted the snow blanket, followed by more cold weather. This produced a heavy crust which enabled deer to travel and forage on more abundant browse outside usual yards.

Game men also pointed out that starvation losses were at a minimum in interior areas where the Department last Fall held the experimental "two deer" season. It's assumed that the resultant heavier harvest helped to reduce the herd to better adjustment with the carrying capacity of the range.

This Spring's survey of the Adirondacks deer wintering areas was the latest in a long-range check on Winter losses from starvation. The accompanying table shows these losses over a 16 year period.

Lake George Lake Trout

The trout shown in the accompanying photograph was taken by Game Protector Jacob G. Krug on July 4th in the deep water off the State Campsite at the lower end of Lake George. Protector Krug was using as a lure a Miller No. 22. The trout weighed 10 pounds, 10 ounces.

Protector Krug took scale samples from this fish and sent them to Dr. John R. Greeley, Chief Aquatic Biologist in the Albany Office. Dr. Greeley, after reading these scales, reported that the fish appeared to be in its tenth year; that the eighth growing season was particularly rapid; that there appeared to be spawning marks at the end of the eighth and ninth seasons. Dr. Greeley further commented that the scale reading showed a rather even and comparatively rapid growth through the years — with no very poor year; and that the fast growth in the eighth season was somewhat unusual, except that there is a tendency for salmon, lake trout and bass in Lake George to grow well late in life, probably due to good forage for large-sized fish.

This may serve as a reminder that our fisheries biologists are anxious to obtain clues as to the life history of our various fish species.

More about snakes

Ever since Adam and Eve, people have been interested in snakes. We had little idea, though, of how widespread or deep-seated this interest is until we published, in the June-July CONSERVATIONIST, a feature article on the *Snakes of New York* by Dr. Edgar M. Reilly, Jr. Senior Curator of Zoology, N. Y. S. Museum. Now we know.

Readers wrote in from right and left, some reporting rare species, some complimenting us on the article and the paintings and some taking us and the author severely to task for errors and omissions. In the author's defense, many of the criticisms would not have been voiced had space permitted printing his complete original text.

But some errors did creep in. To set the record straight and clear up various points of misunderstanding we are pleased to publish herewith Dr. Reilly's "follow-up."—Editor

POISONOUS SNAKES ON LONG ISLAND: *There are no native poisonous snakes on Long Island today.* Under discussion of the Timber Rattlesnake I said that the species had been extirpated from much of the range shown on the map. Admittedly, it is "common knowledge" that the species has not been found on the Island for 40 years, but it *was* part of the snake's natural range. Files here show that "last" records of the Rattler were two from Suffolk County in 1915. There is very little chance of its ever becoming re-established naturally except through escapees from private "zoos."

COMMON NAMES: Each species was given a common name in accordance with more general usage throughout the State. Common names vary from one locality to the next, even within the State—which is one of the reasons for the use of scientific names. The average herpetologist does not care for the common name "Milk Snake" and has attempted to change it to House Snake, Red King Snake, etc. However, Milk Snake is still much more commonly used and by definition is still the common name.

To the general public the two black snakes are inseparable when seen crawling through the fields, as it is seldom the undersides are noticeable. Blacksnake was the common name for both 'till the differences in habit led to the separation into Blacksnake (also known as Blue Racer, Racer, etc.) and Pilot Blacksnake (also known as Black Rat Snake and by other names).

Other species listed which have alternate "common" names follow: *Hog-nosed Snake:* Spotted Adder, Puff Adder, etc. *Green Snakes:* Both are referred to as Grass Snakes. *Fox Snake:* Pine Snake, Spotted Adder, Brown Rat Snake, etc. *Milk Snake:* House Snake, Spotted Adder, Checkered Adder, Red King Snake, etc. *Water Snake:* Banded Water Snake, Water Moccasin. *DeKay's Snake:* Brown Snake (perhaps this name is more commonly used, though many other snakes are called Brown Snake). *Common Garter Snake:* Garden Snake, with local variations because of great variety of patterns and colors in this species. *Butler's Garter Snake:* May be a different species known as Shortheaded Garter Snake.

RANGES AND RANGE MAPS. In the article, as originally submitted, it was mentioned specifically that the exact ranges of all the snakes were poorly known and that the maps, scaled too small to do other than show general areas, indicated only *possible* ranges gleaned from general reference works. The author noted that he would appreciate specific locality records of all species. In the article, this was reduced to a footnote under the Timber Rattlesnake. Many readers have already sent in excellent records—for which my hearty thanks. In particular I hope to publish reasonably accurate range maps of the venomous snakes, but we do need information on all species. For example, it is reasonably certain that the Pilot Black Snake (*Elaphe obsoleta*) is not found on Long Island or the Lake Plains, and that other species are more restricted than shown. I hereby apologize to Long Islanders for not indicating clearly on the map that the Rattlesnake has been extirpated from that Garden Spot.

HIBERNATION: The Water Snake is one of the last to start and the first to end a period of hibernation in the State. In certain areas or times of mild Winters they may be active throughout the cold season. There are many records of their being seen in the water under ice but when it gets really cold they disappear. Very little is known of their hibernating periods, as they are one of the cold-blooded vertebrates which can stand quite a bit of cold.

During the late Fall months some people are troubled by the sudden appearance of large numbers of the more common snakes, especially the common Garter Snake, about their homes and even crawling into the cellars and other parts of the building. These snakes are seeking hibernation places; carefully blocking or cementing of all cracks, crevices and other low openings, and avoidance of open doors and windows will keep most of them out. Just before and just after hibernation snakes seem much more common than other periods, as their numbers are more concentrated.

SCIENTIFIC NAMES: In the middle of the Eighteenth Century the naturalists, led by Linnaeus, adopted a system of names using Latin or Greek words which would eliminate the language barrier and much of the confusion caused by the variety of "common" names applied to one species. Later a law of priority was adopted ruling that the first scientific name proposed, with an understandable description of the species being named, would be the accepted name. This was made necessary as poor communications of the Eighteenth and Nineteenth Centuries had led to several men each describing one species in belief that he was the first to do so. Gradually, the scientists are sifting through the mass of books and periodicals and eventually these names should be stabilized, though in many cases the issues are not clear cut. Thus *Agkistrodon* as the generic name of the Copperhead has been replaced by *Ancistroden* (a long-hand rendition of this was read by the editors as *Anastrodon* just before the press run and could not be corrected in time). *Elaphe* is proper as the generic name for the Pilot Black Snake and the Fox Snake (they being closely related); not *Elaphi* as it appeared under the Fox Snake. The presently accepted specific name for the Common Milk Snake is *doliata*, not *triangulum* as it appears in older works. The names used were taken from the latest *Checklist of North American Reptiles and Amphibians* by K. P. Schmidt—which is accepted as authoritative by most herpetologists.

MILK SNAKE AND FOX SNAKE: There is much confusion here because of the similarity of patterns and color. The Fox Snake is generally (but not always) darker and more reddish in appearance. The scales on the back of the Fox Snake have faint keels or ridges running down the center of each scale; these become weaker laterally. There is also a difference in the scalation of the heads. The Fox Snake, if found at all in the State, is restricted to the far western part.

HEAD SHAPE: *An indication of whether a snake is poisonous.* Original wording, inadvertently cut from the article, said ". . . poisonous snakes of the State are *generally* stouter in appearance than the harmless one and that *often*, because of the poison sacs at the sides and rear of the head, the neck *seems* more restricted." It was not meant to support the fallacious popular belief that "triangular heads indicated poisonous snakes." I did not say this and am sorry if ambiguity of the language led some to so interpret my words. Under Hog-nosed Snake I should have mentioned that many people thought this snake a venomous one, not only because of its habit of "threatening" when dis-

turbed, but because of its relatively thick body. In this species, in contrast to the venomous snakes of the State, the neck does not appear *as* restricted despite its thick body. The point being made throughout was that we only have *three* poisonous snakes in our State and these could easily be learned, and some points of difference were noted along these lines. Actually the pupil of the venomous snakes' eyes is more accurately described as a vertical eclipse, but appears in most cases, as a vertical slit.

HABITAT PREFERENCE: In each case this does not mean that the snake is found only in such a place. For the sake of brevity, habitat preference referred mainly to the New York State individuals. Habits of widespread species often vary in different parts of their range. The Massasauga, in the Prairie States and western Pennsylvania has the obnoxious habit of crawling into barns and other buildings during certain seasons of the year; in New York the snake is too rare and locally distributed for such a habit to be noticed.

—EDGAR M. REILLY, JR.

Napoleon and Josephine

Two beaver were live-trapped on May 28th, 1951 at Stony Point, Rockland County, by Mike Rodak, State Trapper of the State Conservation Department. These beaver were causing damage by flooding a backyard of a Mrs. Potter and endangering the water supply. Beaver No. 131 was a male and weighed 45 pounds. Beaver No. 130 was a female and weighed 47 pounds.

The beaver were released on a tributary of the Little Beaverkill, near Wittenburg, Ulster County. Here they stayed until the Fall of 1952, when they decided to set up a new home on the property of C. Hegner in the vicinity of Wittenburg. The damage by flooding both valuable timber and property made it necessary to live-trap these beaver again. This was done on November 6th and 8th, again by Mr. Rodak, and the beaver moved to the Millbrook School for Boys' zoo to be held over the Winter. Here they were named "Josephine" and "Napoleon" by Frank Trevor, Professor of Biology, and became the school pets. They appeared on the Gary Moore Television Show with Ivan T. Sanderson, noted wildlife author and lecturer.

The following Spring they were released in a pond on the Weathersfield Farm, Amenia, owned by Chauncey Stillman. Here they enjoyed a quiet life and raised a family of three in 1954.

By 1955 their food supply was dwindling and they moved upstream, using a farm road as a dam site. This didn't quite fit in with the farm plans of the Manager, Owen Boyd, and their fate, once again, was decided upon by A. Von Borstel, Conservation Aide of the Conservation Department, who on May 13th and 14th live-trapped Josephine and Napoleon and their three offspring.

They are now taking up housekeeping at the Sharp Reservation Herald Tribune Fresh Air Fund Camp located near East Fishkill, in the mountains of southern Dutchess County.

At the time of this latest transfer Napoleon showed a gain of 4 pounds in all his travels, and Josephine was about ready to give birth to another litter. In fact, we have just learned that the family has been increased by four this past week.

—A. VON BORSTEL

Rich Lake

RICH LAKE, in Essex County about three miles west of Newcomb, is a part of the Huntington Wildlife Forest, a 15,000-acre tract owned by the State University of New York, College of Forestry. This property is used primarily for wildlife investigations and research designed to help improve hunting and fishing conditions in New York State. During the past five years, a continuous program of fish netting has taken place. All fish taken were permanently marked with numbered tags and then released to obtain information on fish growth, movements, and distribution in the lake. In addition, surveys have been carried out to determine the physical, chemical, and bottom conditions of the lake.

The lake is open to public fishing during the Summer months, but ice fishing is prohibited. Trespass and camping on the heavily wooded lake shores are also prohibited. Boats are available for rent locally.

The great northern pike is the principal game fish, although good catches of bullheads may be had in mid-Summer. Growth of most of the fish in Rich Lake is slow. Since many tagged fish carrying valuable information are present in the lake, it is important to send the tag, and information on total length and approximate location of capture of any tagged fish to: Earl F. Patric, Assistant Forest Biologist, Huntington Wildlife Forest, Newcomb.

Vital statistics with regard to Rich Lake are as follows: It has an area of 364 acres; an elevation of 1,564 feet; maximum depth of 60 feet; its bottom composition is largely sand, gravel or rocks in the shallow areas, with organic muck in the deep areas; outlet is over the dam at the east end, draining into Belden Lake; the shore line is rocky and heavily wooded, with no cottages or camps.

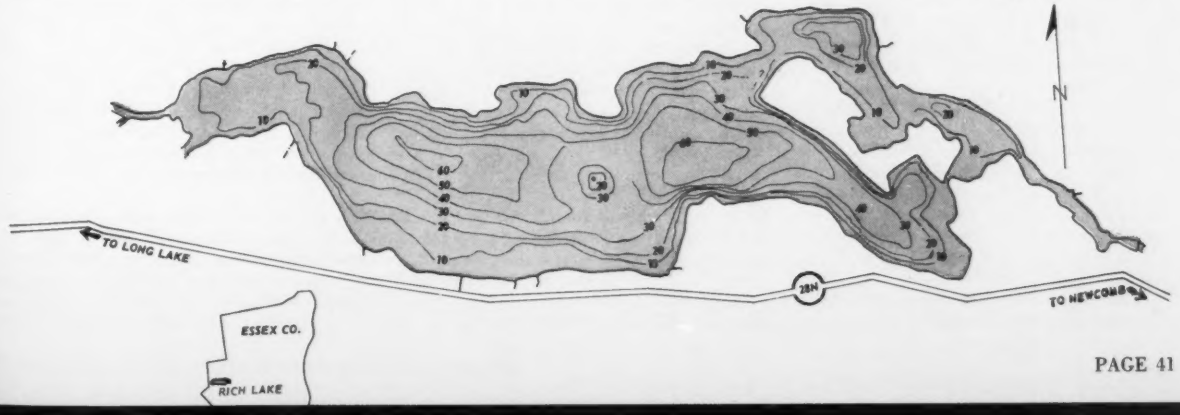
	DEPTH IN FEET						
	0	10	20	30	40	50	60
Oxygen (ppm)	6.3	5.7	5.1	3.9	3.8	3.2	2.6
CO_2 (ppm)	3.5	2.7	4.0	6.8	8.0	8.5	9.6
pH	5.9	5.9	5.8	5.4	5.6	5.6	5.4
Temp. (Fahr.)	71.0	70.0	68.0	61.5	55.5	54.0	53.0

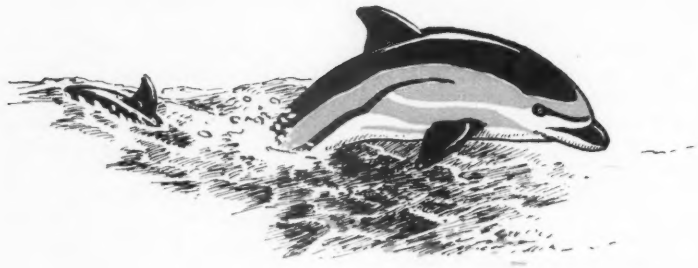
Average Summer chemical characteristics at various depths are shown below.

In addition to the great northern pike, the following species are found in the lake: Common bullhead, yellow perch, common sunfish, red-bellied sunfish, common sucker, dwarf sucker, lake trout, brook trout, horned dace, black-nose minnow, cutlip minnow, common shiner, and golden shiner.

—DR. WILLIAM L. WEBB,
EARL F. PATRIC

* Usually, we publish only one lake article in each issue. We add another in this one—courtesy of the College of Forestry—for the benefit of fishermen, and also to show how College property is used.—Ed.





Letters to The Editor

Conservation and farming

Dear Sir: I am extremely interested in your watershed problems and am passing along some information we have acquired in similar conditions.

The Torrington Fish & Game Club in cooperation with the Litchfield County League started several years ago a co-operative program with the state department. Each January and February we are advised of the trees and shrubs available. White and red pine, Norway and white spruce, hemlock, tartarian honeysuckle, bayberry, multiflora rose, etc. are listed. The Club Conservation Chairman contacts all farmers in the club area and gets orders on what will be needed and planted. In early April plants are distributed to those who have ordered. We have had a high of 13,000 and a low of 6,800 over the years we have been pushing the program.

We have obtained lists from the U.S. Dept. of Agriculture on such subjects as farm ponds, Christmas tree plantings, thinning wood lots, contour planting, erosion control. We have bought a series of books from the Wildlife Management Institute—I would especially recommend the "Upland Game Management" book. All these were distributed free to our farmers, along with a yearly subscription to the N. Y. CONSERVATIONIST.

Your best work can be done in its first stages if you can get enough copies of the "Manual for Local Leaders—4-H Soil and Water Conservation Program" published with the compliments of the Firestone Tire and Rubber Co. Unfortunately, the 4-H groups were more interested in cash crops (baby beef, chickens, etc.), so our copies of the Manual found best usage in the Boy and Girl Scout program, and in the school's natural history courses.

Basically—good farming is good conservation and good game habitat.

Charles R. Chidester, Torrington, Conn.

• *Thanks. We especially appreciate your closing sentence.—Editor*

Checking the evidence

Dear Sir: We were in the Adirondack Mountains (going in from Perkins Clearing) a few days ago. We came to a camp named Camp Cinderation. Just a few feet from the building there is a salt lick. Deer can be shot from the door and windows of the camp. I always thought this was breaking the law. Will look for your comment in the magazine.

J. C. Conlon, Rome

• *We forwarded this to the Bureau of Law Enforcement—for whatever action they wished to take—with the following results:*

"In reply to your memo of July 6th relative to the enclosed letter from J. C. Conlon of Rome, N. Y., this is to advise you that I detailed Protector Preston to investigate the same, and enclosed please find this report of investigation.

F. L. DuCuennois,
District Game Protector"

"Dear Mr. DuCuennois: In regard to your letter of July 6, 1955 concerning Mr. Conlon's complaint, I have the following to report:

"I have done a great deal of hiking in this area, looking for Camp Cinderation, and have been unable to find it. However, I did find a camp called Ginderation, which is better known as 'Pot Ash Camp' or 'Stocks Camp'.

"This camp is located on the southeast side of Potash Mountain. There is a stump near by where deer and porcupine are working. Upon inquiring I was informed that chloride and bacon grease were placed there to draw the porcupines away from the camp because of the damage they were doing. This practice, I believe, is often carried out when camps are left for long periods of time unoccupied.

"If, however, you feel this practice is illegal I will take such action as you suggest. There is no indication, however, that deer have been taken from this stump.

Homer Preston, Game Protector"

Conservation Education Camps

Dear Sir: I wish to compliment you on the wonderful job you are doing in your Conservation Educatiqn Camp program at Raybrook, N. Y. It amazes me how you cram so much into one week and make it stick. My son, Nelson C. Smith, who spent the week of July 3-9 there, enjoyed every moment of his stay and regretted coming home. He hasn't stopped talking to anyone who will listen and believe me I am enjoying the education he is giving me. From what I saw and my boy's account, the personnel at your camp is excellent.

I would like to inquire if you have given any thought to an intermediate or advance course of instruction to boys who have performed satisfactorily in the first course.

Charles N. Smith, Cohoes

• *Each season approximately 2,000 boys attend one or another of our four Conservation Camps through sponsorship by local sportsmen's groups, civic clubs—and some by their parents through these agencies. That's a capacity run for the season, but we wish personnel and facilities were adequate for everyone to attend. At present there are no post-graduate courses.—Asa Smith, District Game Manager, East Central District*

To kill with chemicals

Dear Editor: In your last number you have an interesting article "To Kill With Chemicals" by David B. Cook. I have a major "weeding" problem and am interested in the "swaintabs." I wonder if you could let me know who is manufacturing these and where they can be obtained.

C. H. Pedersen, Ridgewood, N. J.

• *From Forest Lab. Associates, 121 High St., Exeter, N. H.; price $6 per thousand; $2.25 for the tool.—D.B.C.*

Rose, wood duck, oak?

Dear Sir: Interested in "The Inside on the Outdoors Series" by Clayt Seagears, June-July, 1955 issue. I, too, would like to nominate The Wood Duck as the bird of New York State.

I am pleased to learn that the Rose has been named our State Flower. And, we should have a State Tree, not conflicting with named trees of other states. How about the sturdy oak?

Edna DeTrehn, Saratoga Springs

Trout in the Moose River

Dear Sir: Last Sunday I and another man fished for speckled trout at Millard's Falls on the Moose River, between Lyons Falls and McKeever. Each of us caught an 8-inch trout with the right pectoral fin cut off cleanly. We think that these fish were some of those stocked in the Moose River last Fall by the Moose River Fish and Game Club. Last October or November, the club put some fish in the river after clipping the right pectoral fin.

I have heard people say that stocked fish never develop the color of wild or naturally propagated fish. However, these had just as much color as the other fish we caught with unclipped fins. They were all well colored.

John H. Hatt, Lyons Falls

• *Last Fall this District Office marked 3,000 brook trout fingerlings (average length 3.5") by clipping off the right pectoral fin. On September 28, 1954 we released these fish in the Moose River between McKeever and Moose River Village (a 3-mile stretch of the River). This was one of a series of experimental plantings conducted to determine whether stocking of hatchery fish would improve the fishing in this stream. The numbers of wild trout in this part of the River are rather limited, and natural spawning apparently is inadequate for maintaining a large enough population to provide good fishing.*

Reports from fishermen catching the marked, experimentally-stocked trout indicate that reasonably good results have been obtained from stocking in this stream. It is planned to stock the Moose River annually all the way from Lyons Falls, where it joins the Black River, up to a point several miles above McKeever. Both brook and rainbow trout will be stocked.

The two 8" trout which Mr. Hatt reports were apparently from the planting made the previous fall. Obviously the trout made very good growth.

We have found that stocked trout acquire a wild, pink-meated coloration very quickly in the Moose River. This is due to the diet of natural foods which they find there. However, this condition is not peculiar to the Moose River alone, for improvement in coloration of hatchery trout has been noted in many other waters where they have been planted.—D. G. Pasko, District Fisheries Manager

Dear Editor: I was surprised to learn from your letter that the fish I caught were so small when released and that the place where they were released was more than 3 miles above the place where I caught them. Millard's Falls is at least 3½ miles below the Village of Moose River and at least 6½ miles below McKeever.

You might tell Mr. Pasko that another fellow caught another fin-clipped trout in Paint Creek, which is more than 8 miles below the Village of Moose River. Evidently some trout sometimes take long journeys.

I hope that the Department will continue to stock the Moose River. It is such a beautiful river with many cascades and rapids, much more delightful to fish than the Black; and it's always colder than the Black River. I know because the Moose is always colder than the Black where the two join. The kids of the Village swim there and remark that the Moose waters are noticeably colder.

John H. Hatt, Lyons Falls

Concerning swans

Dear Editor: This past week I have counted over 300 swans on Mecox Bay in Water Mill, L.I. These are all full grown birds. They have not been around in groups of more than 20 or 30 before this time. I saw as many as 200 last year about this time, but they break up in August or September.

Do these swans band together elsewhere, and if so why? In other ponds there are still a few which have young. Are these birds from the last few years' nesting which do not as yet raise young?

The population I know has grown here by leaps and bounds over the past eight years.

Gilbert S. Foster, President,
Water Mill Rod and Gun Club, Inc.

• *I believe that you are referring to the mute swans found on Long Island. This is an exotic species introduced from Europe. They are protected against shooting, and as a result they have increased greatly in recent years. During the Winter we have seen flocks of several hundred along the south shore of Long Island.*

Swans do not breed until their third year. Probably the birds you are observing now in flocks on Mecox Bay are one- and two-year-old birds that have not mated. The older birds have mated and spread out to raise families—Don Schierbaum, Game Research Investigator

Wood ducks aplenty

Dear Editor: Two years ago, in June, we were greatly surprised one day to see a mother wood duck and her brood of youngsters in our back yard. The ducklings were tiny, unable to fly and apparently newly-hatched. We often wondered where they could have nested.

Just last week, on June 8, Mrs. Blue and I were having lunch when a neighbor came in to say that our front lawn was full of ducks. Upon taking a look we found baby wood ducks all over the place, and more dropping from a large maple tree that grows between the sidewalk and busy State Highway Route 28. We were herding the little fellows out of the highway and rescuing three that had gotten into our cellar through an open basement window, when mother duck appeared and tried to lure us away by pretending to have a broken wing—just as a mother partridge will do when surprised with her brood. Soon she had called the youngsters from the lilies-of-the-valley where they were hiding and led them away. We counted nine of them.

The foliage is now so thick that I cannot locate the nest but it seems quite certain that the brood of two years ago and the recent one were hatched in just about the center of the Village of Poland in a tree located within six feet of the edge of a busy state highway and within twenty-five feet of our house.

Ernest W. Blue,
District Ranger (Retired), Poland

Reprints of 4-color pages

Dear Sir: Mrs. Mahler and I were so impressed with the various prints of wildlife in THE CONSERVATIONIST that we would like to have these for a collection and framing. I suppose you have had many such requests —I'm sure everyone would be more than willing to contribute. This would also be an extra source of income for the preservation of New York State's wildlife.

Donald K. Mahler, Syracuse

• *While reprints of color prints are not available, back numbers of* THE CONSERVATIONIST *can be secured at a price of 25¢ per issue (prior to price change); 50¢ per issue currently.—Editor*

The printed word

Dear Sir: I have been reviewing some of the last few issues of your magazine and I have run across a letter to the Editor from a Mr. G. A. Springstead of Geneva, New York. This letter had to do with the presence of sawbellies in certain of the lakes of the Finger Lakes region. In it was related the story of a Mr. Seth Green who had introduced them about 1869 or 1870 from Chesapeake Bay. The concluding paragraph in the letter relates this as a proven fact.

Mr. Springstead is undoubtedly an excellent outdoorsman and an interested conservationist and I do not wish to impugn his veracity in the least, but to claim direct knowledge of an incident that occurred before his birth seems like really stretching his neck out. In the third paragraph he tells about several fishermen telling his father who in turn told him. Each had related the tale obviously many years after hearing it. Mr. Springstead in turn tells us. This story may be true, but going by the general rules applying to evidence in a court it must go down as just hearsay. I think that the Editor should point these things out and instead of a brief thank you, sir, point out the possible drawbacks of taking these stories at face value. Most individuals take the printed word as Gospel truth.

Mr. Springstead, however, does present a logical sequence of events. A more sensible one than migrating fish that skip some of the lakes they swim through.

Norberg R. McManus, Captain,
Aberdeen Proving Ground, Aberdeen, Md.

• *We printed Mr. Sprigstead's letter as it came to us—just as we do yours.—Editor*

Keeping the spark alive

Gentlemen: In reading THE CONSERVATIONIST I see it is predicted that the Mountain Lion might return to the Adirondacks.

On May 21st, 1955, returning from a fishing trip, William Phillips, Schenectady, Douglas Posson and myself from Schoharie, saw a large Mountain Lion near Fishing Brook, between Long Lake and Newcomb.

He was standing in the center of the highway and we were less than 50 yards from him. He appeared to be about 6 feet long and we estimated his weight about 125 pounds. His tracks in the sand beside the road measured 4 inches across.

Alfred Rickard, Schoharie

Shedding antlers

Dear Sir: Enclosed is a photograph which you might like to print in THE CONSERVATIONIST. It is a photograph of the antlers of a whitetail buck. Isn't it very rare that a set of antlers are found together? Through all my nature studies and travels through the wooded hills of Allegany County I have never found a set of shed antlers until early this past Winter.

Normal L. Ives, Genesee, Pa.

• *In this State, deer shed their antlers from the last days of November through the month of January, with the peak of this activity about January first. Once the antlers are ready to go, both right and left usually are shed within 24 hours. But in that time a buck can travel far. So it is unusual to find a pair of antlers so close together.—Editor.*

Processing buckskin

Dear Sir: The letter to the Editor, entitled "Buckskin" from Edwin Utter, Teaneck, N.J. in the April-May, 1955 issue, concerning custom-made deer skin articles, was of considerable interest to us for we are exclusively engaged in this specialized field, and in fact, pioneered it a number of years ago.

While we don't offer jackets, we do make gloves, moccassins, handbags and wallets and we've had a great deal of experience in dealing with the individual hunter and his often exaggerated expectations from a deer skin. In size, deer skins average about eleven square feet of usable leather, assuming that the deer hasn't been badly shot up, that the carcass has been carried, not dragged, out of the woods, that skinning has been expertly done to avoid gouging scars, and that proper attention (heavy salting) has been given to the hide after skinning. All of these things reduce the yield from a skin, and hunters are sometimes apt to forget about such improper treatment and to discount its damage to a skin. In addition, scars, scratches and minor blemishes often become apparent after the skin is tanned and such imperfections must be avoided if top quality apparel is to be made.

However, assuming that a skin is perfect, and few are, an average skin of eleven square feet doesn't yield too much, for gloves and moccasins each require three feet of leather; handbags six to seven feet; wallets one and one-half feet, and jackets, we understand, from thirty to forty-five feet, depending on size and style. Many skins, of course, are not average for we find some so small as to yield only one or two pairs of gloves and large ones that will sometimes yield five pairs. And in connection with this, it's a rare hunter who will admit to a small deer, and as tanning and manufacturing time elapses, last Fall's 125-lb. deer has become a 200-pounder, and invariably they are "large, full skins with only one bullet hole."

The fact remains, however, that use of their deer skin is a good proposition for hunters. Such items provide excellent trophies that the whole family can often enjoy, a high degree of styling and quality workmanship is available, custom fitting is the rule, which is in contrast to standard sizes sold in retail stores, and all at an appreciable saving, for total cost is usually about one-half of comparable items when regularly purchased. The deer skin, then, is valuable.

Our experience shows that most people prefer personal attention and fitting that sometimes cannot be secured by mail. Accordingly, where possible, we urge hunters to contact a taxidermist when they have a deer skin. The taxidermist is not only familiar with the handling and proper care of skins, but usually is experienced in measuring, fitting, and leather requirements of various articles. Samples can be seen, too, for the modern taxidermist invariably represents a number of manufacturers, such as ourselves, and can offer a wide variety of apparel, from head to toe.

It would be interesting and informative to your readers to visit a custom manufacturing plant and view the many processes that convert a deer skin to fine apparel. We're glad to have visitors and cordially invite any who are in this area to stop in and see our operation from start to finish.

Elbert H. Heacock,
E. L. Heacock Co., Gloversville

• *This company has been making buckskin products since 1791.—Editor*

Launching boats

Dear Sirs: I see one area of N. Y. State conservation that I feel could be improved upon. Please don't consider me officious for making the suggestion of having good public launching sites for trailer-mounted boats at our numerous beautiful N. Y. State lakes. Good launching sites would also help the State tourist business.

R. M. Wright, Canajoharie

• *An expanding program of this type is already in effect at appropriate campsites, as well as on Canandaigua, Oneida and other lakes. But such launching sites aren't easy to acquire, and they're certainly not cheap. —Editor*

Soil testing

Dear Sir: Where would I have to send some soil to have an analysis taken? I am interested in planting some trees on soil that has never been very good for raising crops.

H. George Van Alstyne, Chaumont

• *County Agents usually have a soil testing service in connection with their offices. I'm sure your local County Agent would undertake this task for you whether or not you are a member of the Farm Bureau. If not, try your local Soil Conservation Service.—Editor*

Allergy, it says here

Dear Sirs: In reference to the letter of Geo. Duryee in the Apr.-May issue, regarding a poison ivy-like rash from rabbits: This is definitely not poison ivy. I have had both a number of times and there is a distinct difference. He has described the symptoms quite well. The outer layer of skin dies and will peel off in long strings, especially between the fingers.

K. H. Gaylord, Geneva

• *Our biologists believe that some kind of allergy must be responsible; it is known that almost all species of animals are capable of producing various types of skin reaction in humans.—Editor*

All editors aren't piccolo players

Dear Editor: Yes, I recall cackling, last Winter, when I came across "All Hunters Aren't Hoodlums." And now I see you think it was a less cumbersome title than "Not All Hunters are Hoodlums" would have been, and more provocative. I have been an editor (see footnote)* for 30 years. Just retired as one. Never a very prim one. Willing to split an infinitive when not splitting seemed clumsy (besides, there is no such rule except in the imagination of the schoolma'ams); glad to end a sentence with a preposition when the prim way sounded stilted (Churchill has pointed out the absurdity of the prim way with an example: "That is something up with which I will not put"—how would that sound?); never disturbed by "It's me;" in favor of vernacular, especially in a magazine like yours, read by real people and not by longhairs. But I think "All Hunters Aren't Hoodlums" is a howler.

In the first place, it says no hunters are hoodlums. Not true. "Not All Hunters Are Hoodlums" would have said what you meant, and it isn't clumsy at all, but your title was. My gosh, I'm surprised you editors kicked that one around one minute.

This time (April-May, p. 47) you title the piece "All editors aren't dopes." That means no editors are dopes, and I don't believe it a minute. You are going yourself to say I'm an exception. Hoping you are the same.

A. G. Ingalls, Cranford, N. J.

---

* Footnote: Joke about the piccolo player, only let's change him to an editor. A weepy editor complains to the boss that someone behind his back called him a damn fool. Hurt his tender feelings. Affected his work, in fact. He felt all broken up about it. Boss gets each staff man on the carpet and one by one asks them "Did you call that editor a damn fool?" No result till last man, who replies, "No, but I really would like to know who called that damn fool an editor."

Wood duck nest box

Dear Sir: Here is one vote for the Wood Duck, but please — tell us how to build a house for one (dimension and size of holes).

Grant V. Thompson, Troy

• *We published an article on this subject some time ago and have reprints available; we are forwarding one.—Editor*

Penny wise, pound foolish

Gentlemen: I am very pleased with the June-July issue. I consider that it was wise to increase the size of the magazine and increase the price.

I was a subscriber of another magazine that took the opposite action—reduced the size of the magazine to avoid increasing the price. The result was that it was necessary to discontinue publishing because of loss of subscribers.

Andrew Kinbacher, Westwood, N. J.

More salmon

Gentlemen: I was fishing in the Sacandaga River below the new Stewart's Bridge Dam when I caught two fish. I have never seen anything like them before. I showed them to several people and no one had seen them before. Our guess is that they are sock-eye salmon, stocked in Lake Luzerne. It is possible they came out of the lake into the Hudson River and then up the Sacandaga.

I am enclosing some scales from the largest fish which was 15½ inches long. The other fish was 15 inches. I hooked these fish on a dry fly named Male Beaverkill.

George R. Sutliff, Corinth

• The two fish you describe were Atlantic salmon, beyond much doubt. Although all I have to go on is the scale sample, the growth rate and scale appearance is rather conclusive. Enclosed is a reprint "Trout or Salmon" which gives details as to identification. Note that a red or sock-eye salmon has much longer anal fin. There is a size limit of 15 inches on Atlantic or landlocked salmon (which are impossible to tell apart in our waters).

In early Fall 1953 an experimental plant of fingerling Atlantic salmon was made in Sacandaga River, including outlet of Piseco Lake. Several specimens were subsequently sent in from Piseco Outlet and I have the scales for comparison. My interpretation of your 15-½-inch salmon from scale reading is that it was from the 1953 plant and is hence only two winters (in third year). The first year checks with hatchery growth type. The early part of second year checks with the Piseco Outlet specimens. (This does not mean they came from there. This plant was widely distributed along the Sacandaga River and tributaries.) The latter part of second year was rapid and presumably represents growth in Sacandaga Reservoir or Stewart's Bridge Reservoir. The 1955 growth was also at a rapid rate, so these fish evidently find good feeding in Scandaga River.

Thanks for the information. If you catch any more salmon, please keep us posted.—John R. Greely

Minnows for bait

Dear Sir: Recently you issued some valuable information on the raising of various types of minnows for bait. I wonder if you have a spare copy and if not, can you let me know where to obtain a copy of the write-up?

A. S. Wagner, Tillsonburg, Ontario

• The article to which you refer appeared in the December-January, 1954-55 issue, individual copies of which are available for 25¢. However, there has been so much demand for information concerning bait fish culture that this article is in reprint form, copies of which are available free upon request.—Editor

Sock-eyes in Chapel Pond

Dear Sir: I was on a fishing trip the week of June 8th, and while fishing in Chapel Pond on Route 86, Essex Co. I caught a fish which was of great curiosity to me and many others. I looked it up in the fisherman's encyclopeida, and the nearest description that I could find was the kokanee (Ko-can-e) salmon. The fish was about six inches long, bluish green back and silver belly. There seemed to be a great amount of these fish in the lake and a very beautiful sight to watch as they were breaking for flies.

This being a new kind of fish to me, I would like to know what steps the Conservation Department is taking to protect them in regards to size and limit.

James Bevis, Jr., Schaghticoke

• Your identification of fish from Chapel Pond as a kokanee is correct. This is a landlocked form of red salmon, also called sock-eye salmon. We have been stocking these in several lakes on an experimental basis (see enclosed reprints from The Conservationist*). Although a specimen was netted in Chapel Pond in a survey made by our Adirondack Fish Management District, yours is the first report of a red salmon taken by angling in Chapel Pond.*

There is no season or size limit on red salmon. These fish feed on plankton and small insects and are difficult to catch except on very small lures. If you catch any more, it would be helpful to us to have measurements and scale samples for age determination.—John R. Greeley

Back issues

Dear Sir: I have enjoyed your magazine for many years, I believe since it was first published. Further more I have found it to be a valuable source of reference information.

I would appreciate your sending me a list of available issues previous to the Aug.-Sept., '54 issue so I may fill the gaps in my reference library.

Sgt. George I. Butts, Fort Riley, Kansas

• In our April-May, 1954 issue we ran a list of those who had back issues for sale or trade; acting as intermediary got too big a job for us to handle. However, here's our own list of back issues available from our office—back issues before April-May, 1955 at 25 cents each; April-May, 1955 and on, at 50 cents each:
April-May and June-July, 1949; April-May, June-July, August-September, and October-November, 1950; February-March, April-May, August-September, 1951 and December-January, 1951-52; February-March through December-January, 1952-53; February-March through December-January, 1953-54; February-March through June-July, 1954 and October-November, 1954 to present, June-July, 1955.—R. B. M.

Campsites

Dear Sir: Boy Scout Troop No. 18, Schenectady, would like permission to camp at Wells Campsite during the week-end of May 14 and 15 and we shall appreciate it if you will advise us whether or not the utilities will be ready for use on that date. And we would like to have written permission to use the campsite on that week-end.

Last Spring workers on Sacandaga Lake Campsite refused to let the Troop pitch any tents until they obtained permission from the Forest Ranger, and if he had not been readily available it might have meant a drastic change in their plans. Actually permission was granted immediately.

We appreciate the efforts of the workmen to protect the State lands, but we would like to be prepared for a similar situation and we would appreciate a letter giving us permission if it is in order.

D. R. Lumgair, Schenectady

• There is no objection to your Troop camping at the Wells site during the week-end of May 14 and 15. Caretakers won't be on duty at our public campsites until May 26th, however. You might drop District Ranger M. C. Fisk, Northville, N. Y. a line, telling him of your plans.

Actually, we can make no reservations for any one at our public campsites. It's first-come, first-served at all of them, regardless of season.—Editor

About beechnuts

Dear Sirs: While I was working near the hamlet of Rock Royal, Town of Tompkins, in Delaware Co., I was trimming some beech trees and found the beechnuts growing in clusters like the ones enclosed in this package. I investigated other nearby trees and found the nuts growing in the same way. Isn't this rather unusual or do they sometimes grow like this? Anyway, I am curious to know why they grow like this. Thank you for any explanation you can give.

Alton Brundage, Walton

• The clustered beechnuts, six and seven in a cluster, are indeed unusual, since these commonly occur in pairs, or at the most in three's. Just what stimulation caused this to happen in your locality is anybody's guess, but it is a fact that this sort of thing does happen in the plant world every once in a while. It is particularly interesting to have your observation that not only the one tree showed this multiple fruit growth, but also other trees nearby. It would be worth while to note whether all these nuts mature by the end of the season. If you have occasion to observe this, we would be glad to hear from you again.—E. W. Littlefield

Oh for the life of a Forester

Dear Peter: Enclosed is a definition of a "Forester" sent to me by a District Forester by the name of MacDonald, from Nova Scotia. MacDonald and three other Nova Scotia Foresters recently spent a day with me at the Saratoga Nursery to learn how we do it.

Our Foresters may enjoy this a true-to-life definition.

E. J. Eliason,
Asst. Supt. of Tree Nurseries

A FORESTER

"The Forester is an amateur woodsman with a college education. There are two classes of Foresters. One class believes in keeping abreast of those broad dynamic movements of the present day that challenge the best efforts of the nation's thinkers. The other class fights fire, builds truck trails, plants trees, and wears old clothes.

"Some Foresters have offices, some live in cities, and some work in the woods. Lots of the Foresters spend practically their entire lives in God's great out-of-doors. They love to hunt and fish. They would too—if they only had time.

"I used to be said that a Forester's best friends were his horse and his axe. Today a Forester has no need for a horse and he might cut himself with an axe. Years ago most every Forester wore a big Stetson hat and carried a gun on his hip and a flask in his pocket. Nowadays big Stetson hats are worn only in movies, and you hardly ever see a Forester carrying a gun.

"An interesting thing about a Forester's life is that he meets all kinds of people from hobos to multimillionaires. It is not uncommon for a Forester to have the privilege of personally doing a millionaire tourist favors. However, there is no record of a millionaire ever doing a favor for a Forester. But even if they don't make much money, it's nice, steady work, and they have lots of fun.

"Another satisfactory thing about a Forester's career is that he is his own master, absolutely independent and answerable to no one for his professional conduct. That is, except to his wife, ladies' garden clubs, sportsmen's associations, nature lovers, newspaper editors, and local politicians.

"Forestry is a very pleasant profession because it is so easy to get ahead. Many Foresters graduate from college with only a few debts and immediately get a job and a wife. In about ten years time, in addition to the same job and the same wife, they have more debts and five kids. That's why Foresters are so happy."

Iron ore in New York

Dear Sirs: In your February-March, 1955 issue you have an article "Mining and Prospecting in New York" by John J. Prucha. On page 12 there is a map showing iron ore deposits in northern New York. Could you please send me the names and addresses of the companies working these deposits at the present time.

I am a chemistry student doing a working model of a blast furnace as a chemistry project. I want this information as possible sources of iron ore, something I have not been able to obtain.

Bruce M. Gowens, Highland Falls

• *Currently three mining companies are producing iron ore in New York State. They are the Jones & Laughlin Steel Corporation, New York Ore Division, Star Lake, N. Y.; the Republic Steel Corporation, Lyon Mountain and Mineville, N. Y.; and National Lead Company, Tahawus, N. Y. All of the ores being produced are magnetite. The iron ore produced by National Lead Company is a co-product of titanium ore. The distribution of other magnetite, hematite, and limonite ores in New York is summarized in "The Mineral Industries of New York State," published by the State Commerce Department, 112 State Street, Albany, N. Y.—J. J. Prucha*

Farmer-hunter relations

Dear Sir: I believe that it is only just that the hunter-farmer relations be discussed with both sides having their say. I believe these relations can only be improved when the hunter starts talking and acting toward the farmer with some common sense.

I hear and read so much of the hunters who damage farm property and livestock. While realizing that this is factual in many cases, I also believe that hunters must be judged as individuals and not as a general group.

Personally I like farm people. But if I judged them all by the acts of a few, I would not. We all know of farmers who remove their posted signs until the State fish trucks have stocked their streams; farmers who post their own land and hunt on State lands; farmers who accept and ask for State technical aid, financed by taxes paid mostly by hunters, to create private duck hunting ponds; farmers who sell to a few the right to hunt public deer on vast lands that could accommodate many hunters. If you judge us hunters as a general group, shall we do the same?

W. Shear, Endicott

Sugaring off

Dear Editor: As a regular contributor to *Kosmos Magazine*, a monthly used widely in German schools and published in Stuttgart, Germany, I have been asked by the editors to collect material for an article on the production of maple sugar. To my surprise I found out that the work had been done for me when I opened the current issue of your publication. I wonder whether there is any possibility to obtain copies of the photographs which were used to illustrate this article. The photographs Nick Drahos took are far better than anything I have gathered so far. Naturally, full credit would be given to the source of the pictures.

Since my work with the German publication does not have any financial rewards I would be unable to pay for the right to use the photographs mentioned above.

Dr. Gustav A. Konitzky, East Aurora

• *We are forwarding the prints under separate cover. All we ask is their safe return, and that proper credit be given.—Editor*

Raising worms

Dear Sir: I am interested in raising earth worms, is there any written material available from your Department?

Charles Scharf, Mount Vernon

• *The preferred container for growing worms is an ordinary galvanized wash tub, 'though metal drums, old bathtubs and other watertight containers are suitable. A 2-foot diameter tub is capable of producing 3,500 to 5,000 fishing worms annually. The tub may be painted with asphalt to prevent rusting. It should be filled to a depth of 8 to 10 inches with a clay loam or porous clay soil, well-supplied with organic matter. If low in organic matter, one-fourth its volume of decayed leaves or staw should be mixed with the soil. The soil should contain no sand.*

While various kinds of earthworms can be raised in tubs, the small English or red worm is best. These may be obtained from bait stores. One hundred are sufficient for starting each tub. They reproduce throughout the year in a reasonably warm basement. From egg to maturity requires about six months.

The soil should be dampened throughout, and water added as needed, about every other week, but never to excess. For food, excellent results are obtained by mixing one pound of 15 to 16 per cent protein mash, such as complete hog feed mash or broiler finisher mash, with one-half pound of lard, and mixing this with the top 2 or 3 inches of soil every two or three weks. Then cover the soil with damp burlap or boards. Ants can be controlled by insecticides about the tub, and mice by covering with wire screen. —R. B. M.

A friend in Massachusetts

Gentlemen: Your postcard telling of the rate available for those whose renewals and subscriptions were postmarked not later than May 1 was not received by me in time to take advantage of it. However, I am enclosing herewith my cheque of $5 so that I may have the special rate for the three years of your excellent CONSERVATIONIST.

Because of my own great interest in conservation, I have been both Chairman and member of the Standing Committee of the Massachusetts Legislature as well as Recess Commissions, and I have tried to be of such help as I could to our own Department of Natural Resources so that they might publish something equally good.

Senator Edward C. Stone, Osterville, Mass.

Something sprung

Dear Editor: Commenting on the 2-deer season: A lady reader just called me asking if I'd seen that CONSERVATIONIST, in which she said was a report that "if you took two deer, and one of them was a *'duck'*, etc." So I looked it up. She was right, and this time you're wrong! Must be a sprung letter in your linotype.

Willet Randall, North Creek

• *Or a sprung lens in our bi-focals.—Editor*

Aerial photographs

Dear Sir: There was an article entitled "More About State Forests" by Charles F. Baar in the April-May, 1955 issue of THE CONSERVATIONIST. The article mentions that volume determination is or can be accomplished by means of aerial photographs. As the writer was an aerial photographer during the Second World War I can understand how aerial photographs can distinguish between deciduous and evergreen trees, but I can't see how a fairly accurate count can be determined by the use of aerial photographs unless a stereoscope is used.

From a viewpoint of a conservationist and a photographer I would be grateful if you would inform me as to how it's done. Also, how else are aerial photographs used in conservation work? Any suggestions for further research will be greatly appreciated.

Leonard Shields, Brooklyn

• *The actual count cannot be directly obtained from the photos, but a relationship has been developed between the size of the crown to diameter. Tree heights can be determined from the lengths of the shadows. Thus two important measurements are obtained from the photos. In addition, of course, the various forest types can be plotted and the acreages thereof can be measured. But the photo study must be backed up by actual field checks in sample plots.*

The shadow method for determining tree heights is not being used on our plantations. Field studies are being made to determine this factor by site classes.

I should like to refer you to the following publication for more comprehensive information: "A Method of Estimating Timber Volumes from Aerial Photographs," by Miles J. Ferree, State University of New York, College of Forestry, Syracuse, New York, March 1953. This may be procured from the Department of Forest Extension at the College for $1.

This publication has an excellent bibliography which outlines some of the sources of information relative to the use of aerial photographs in forestry activities. I should like to mention here that Mr. Ferree is the expert behind the Department's pilot work on the plantations.

In addition to Mr. Ferree, may I refer you to Stephen H. Spurr, Associate Professor of Forestry, University of Minnesota, St. Paul, Minnesota, who also has done considerable work in this field. He has published a text on the subject titled "Forest Inventory," published by The Ronald Press Company in 1952. Another publication by Spurr is "Aerial Photographs in Forestry."
—C. F. Baar, Supervising Forester

More on fires

Gentlemen: One fire building method seems to be overlooked in the December-January issue. I first saw Canadian guides use it.

Find a standing dead stub several feet high full of punk. Tear out the dry inside, with bare hands if necessary. Huddle over a quantity of it and light, fanning to revive the flame. Have small dry branches from lower dead limbs to pile on and build to any size wanted.

Stanley L. Burns, Proctor, Vt.

Oak gall

Dear Editor: I am enclosing herein a colored snapshot of what appears to be a growth on a young oak tree of approximately eight feet in height. This oak stands alone, outside of a stand of oak, and surrounded by thornapple brush. It is the only oak affected on about five acres.

When this "growth" is removed and broken open it appears to have a pithy interior with a seed effect. The "growth" seems to be prevalent on the ends of the branches and in a few instances, leaves are protruding from the "growth." The exterior appears to be spiney. I have hunted and been in the field for a good many years but have never seen anything resembling same.

It would be greatly appreciated if you would refer this photo and letter to the proper department who in turn would advise me what the "growth" might be.

Charles W. Hill, Amsterdam

• *Your letter of July 12 with colored photograph addressed to the Editor of the "Conservationist" has been referred to this office for reply. The growth shown on the white oak in the photograph is a common gall on oaks known as the wool sower,* Andricus seminator *(Harris). It does not cause any noticeable damage.*

For your information, we attach quotation describing this gall taken from the New York State Museum Memoirs 8, Volume 2, entitled, "Insects Affecting Park and Woodland Trees" by E. P. Felt, State Entomologist (1906).—William E. Smith, Forest Pest Control Foreman

Fishing the reservoirs

Dear Sir: I would like very much to fish in the Catskill reservoirs, I am particularly interested in the Neversink, but have heard that permission must be obtained.

Can you advise me as to where and how such permission can be obtained? Is it permissible to use a boat or canoe?

Harold R. Wood, Endicott

• *Information for those who would fish the New York City reservoir system may be obtained from the Department of Water Supply, Gas and Electricity, 23d Floor, Municipal Building, New York 7, N. Y.*

Recent changes in regulations, it is understood, permit use of a manufacturer's 12' stock boat; boat owners should note that requests for a boating permit must be mailed or personally delivered, accompanied by a self-addressed stamped envelope, at least a week in advance of launching a boat. But for full and accurate information, best write the Department of Water Supply, Gas and Electricity.—R.B.M.

Snapping turtles

Sir: We note in the April-May issue of THE CONSERVATIONIST you refer in your reply to Victor C. Murdock of Scotia to a bulletin "Snapping Turtle Control and Utilization."

In our area many ducks nest in the cattails and other reeds along the shore of a marshy section. There are snapping turtles there, and people tell us that the young ducklings seldom survive as the turtles grab their legs and drag them under water. Is this usual, and will you kindly send us the bulletin or other material which may help us to correct the trouble.

Earl W. Benjamin, Branchport, N. Y.

• *The bulletin is out of print, but we enclose a reprint of an article we published on the subject of snapping turtles. Yes, they do take ducklings.—Editor*

A. F. Tait

Gentlemen: It was indeed a pleasure to see "Trout Fishing on Chateaugay Lake" on the back cover of your Feb.-Mar. magazine. The artist, A. F. Tait, stayed right here at our hotel (then a log cabin) in 1834. He painted two other pictures while here. One was "Arguing the Point," which has been cited as one of the finest examples of early American art and appears in a U. S. history book. All were local characters in this painting, and included the owner of the hotel, Mr. Louis Bellows, to whom Mr. Tait sent three copies of the original. The other picture he painted while here we have been told was "Camping in the Woods." We have no copies of this painting but would be interested in obtaining one.

Mrs. A. M. Chase, Chateaugay

Captions

Dear Mr. Fosburgh: Your April-May issue just came to hand. I have had every number of your magazine. I think it is just fine, and usually read it from one end to the other, but I am going to advise you of an improvement. On pages 14 and 15 there are two pictures which have no small print articles to explain what they are. To be more interesting each picture should have such explanatory article. Most of your pictures do.

Warren M. Robinson, Hoosick Falls

• *You're so right.—Editor*

Credits

First cover, page 19, National Gallery of Art, Washington, D. C.; second cover; Werner's "Civil List and Constitutional History of the Colony and State of New York;" 2, 3, William Rice; 4, 5, 9, 27, Roy Irving; 6, 7, 12, 13, 14, 23, 24, 25, 26, H. Wayne Trimm; 8, 30, 31, Earl McGuirk; 15, E. W. Foss; 17, Kensett, courtesy of Victor Spark; 20, 21, Winslow Homer, courtesy of Charles R. Henschel; 28, 29, Hugh P. Crisp; 32, Ellen Edmonson, Crisp; third cover, Clayt Seagears; fourth cover, Louis Agassiz Fuertes.

New York's Sporting Spots —The Oswegatchie

THE noon July sun, face up on the mirror of the river, parted in rolling bright furrows as the canoe's nose greased its way. The paddle dipped and feathered without noise. But now and then the wake slapped sharply in those little grottos where the mink like to run under the banks.

This Adirondack river was narrow. Maybe three canoe lengths wide. And with a lazy current. Now and then when the shadows of the old spruces were just right you could look way down through the forest-stained brown water and see the ghosts of ancient saw logs. Especially where the water piled against the dead ends of its countless hairpin turns. At these deep bends the current often rolled down and around under the ice-rubbed jams of windfall logs. And out from these at the surface a lacy edging of littered foam sometimes crept a yard or more. Here in May, before the warming waters moved them to the spring holes, you might hear at night the lippy, sucking sound of big brook trout feeding on the drowned proteins at the scum's edge.

But according to notes in an old sketch book, this was noon in mid-July. I had been paddling steadily all morning with a couple of hours to go before I figured to set up the rod. The canoe was nosing into one of those sharp bends when I was violently startled by a slapping splash only a few feet ahead but hidden by the bank's angle. Then right alongside a brook trout of around three pounds rolled and darted under the canoe. As I lifted the paddle a slack fish line slipped off the end. Involuntarily I lunged to grab it and fell overboard against the bank with what undoubtedly was a pretty fair splash.

At least it produced a chain reaction for I could hear a wild exclamation around the corner and I could see the trout's wake as it headed back where it came from.

I climbed back in the canoe with adequate silence and embarrassment and drifted downstream to a still-hidden vantage point where I could get out and peek through the brush to see what was going on. I felt quite guilty of horning in, however unwittingly, on what now obviously was somebody else's act.

There were two men in a canoe. One with a red shirt was doing a good job with the fish. He kept his rod tip high while the trout bored back and forth well away from him. Even so it wasn't long before the fish broke off.

Later I learned that Red Shirt was from Philadelphia, his partner from Ithaca. Tenth year for both on the river. Good men with a wet fly, particularly a slowly retrieved Parmacheene Belle, they had taken many fine brook trout over the years, their best in 1932—an even four-pounder from the same spring hole. But this one that got away, they told me, must have been a buster. What a tremendous splash! I never told them it was me.

I'll never forget that picture. Their canoe was checked in mid-stream just beyond a big white pine that slanted up over the pool from the bank. The river turned away into the dark shadows behind them. Reflected spires of spruce and balsam wriggled on the surface. The red shirt was vivid as a cardinal flower in the sun.

Last month we finally got around to making the color sketch opposite from notes made that day 17 years ago while drying off on the bank. But the scene probably is unchanged—except maybe the big, leaning pine has blown down.

* * *

The place is the Oswegatchie River about 10 miles upstream from where it slides past the Village of Wanakena and on via Inlet Flow into 7,000-acre Cranberry Lake. The Oswegatchie continues on out of Cranberry and runs some 70 crooked miles northwest into the St. Lawrence. But we're talking about the *inlet*, that fascinating wild flatland stream that the written record of more than a century shows has contributed so much to New York's sporting scene. It is a river of memories all the way. It is singularly dear to the hearts of the brook trout man, the canoe man, the camper. Its turns are short, its legends long. It threads its way through the heart of a great block of State Forest Preserve from its source near the northeast corner of Herkimer County to Wanakena in St. Lawrence. It isn't long—as many New York waters go—for you can paddle virtually its entire length in a full day. But you never want to hurry in the Oswegatchie Inlet.

Most loved spot on the river is High Falls, a 10-foot ledge with a wonderful pool below. Before thoughtless bait fishermen dumped perch in Cranberry, a man could sit on a rock at High Falls and watch monster brook trout trying like salmon to leap the tumbling flood.

The trout still try to jump High Falls. But today they aren't so many or so big as in the days when houseboats, bolted permanently to the drowned trees of Cranberry's Brandy Brook Flow, made it possible for the angler to cast from his bedroom window over unbelievable schools of big brook trout moving in a strange daily rhythm from the main lake up the Flow to what once was known nationally—and with deep affection—as the Potato Patch.

The Conservation Department has been trying desperately to help trout gain the upper hand over the perch in Cranberry. Introduction of the faster-growing, longer-lived rainbows has produced new hope. Other experimental work continues. Some day those fishing waters may be fabulous again. But the scenery and the charm of the inlet hasn't changed a lick.

From Wanakena the lower 2½ miles of the Oswegatchie are navigable by canoe only when the water is very high—otherwise you're wading the bouldery shallows and hauling the craft much of the time. So skip it. Put in at the tiny hamlet called Inlet on your map. (Cranberry Lake Quadrangle of the U. S. Geological Survey.) To get there from Cranberry Lake Village, go west on Route 3 to Benson Mines. Inquire there where you take the little dirt road south to Inlet which, by the way, is a small piece of private land straddling the river and surrounded by Forest Preserve.

Now you've about nine miles of twisting to High Falls with many spots to camp and a good side hike (to Five Ponds) on the way. Go up the trail from High Falls to Nicks Pond because on the way you'll see bigger pines than you ever saw before. The Oswegatchie is navigable only a mile or so above the falls to just beyond its junction with the Robinson River (not navigable).

THERE are probably many who will shoot us for unfolding the opportunities of this wild sporting spot. But, Brother, the time has come for some of us people to spread out. It's getting pretty doggone thick in the easy places. And besides somebody might get a lesson out of what some unspoiled country looks like.

—CLAYT SEAGEARS

NEW YORK'S SPORTING SPOTS

The Oswegatchie River near High Falls

CEDAR WAXWINGS inhabit all portions of the State, nesting from 10 to 30 feet from the ground, often in shade or apple trees. Their nest resembles that of a kingbird. During the warm months the Cedar Waxwing feeds to a large extent on insects, although small fruits are eaten when available. This habit may cause it to be considered a pest in cherry orchards. Often feeding in groups, they sometimes pass the cherry or some other small fruit from one bird to the next and perhaps back again before one will eat it. During the Winter they band together in large flocks. At this time the food consists primarily of tree seeds and berries. The call is a shrill "tse-tse-tse."

The Bohemian Waxwing is considered an irregular Winter visitor from farther north. It may occur in flocks, or individuals may associate themselves with a flock of Cedar Waxwings. The light markings on the flight feathers are conspicious in the field.

(Courtesy N. Y. S. Museum)

BOHEMIAN WAXWING

Bombycilla garrula

(Linnaeus)

Female Male

CEDAR WAXWING

Bombycilla cedrorum

F. Immature M.

All ½ nat. size